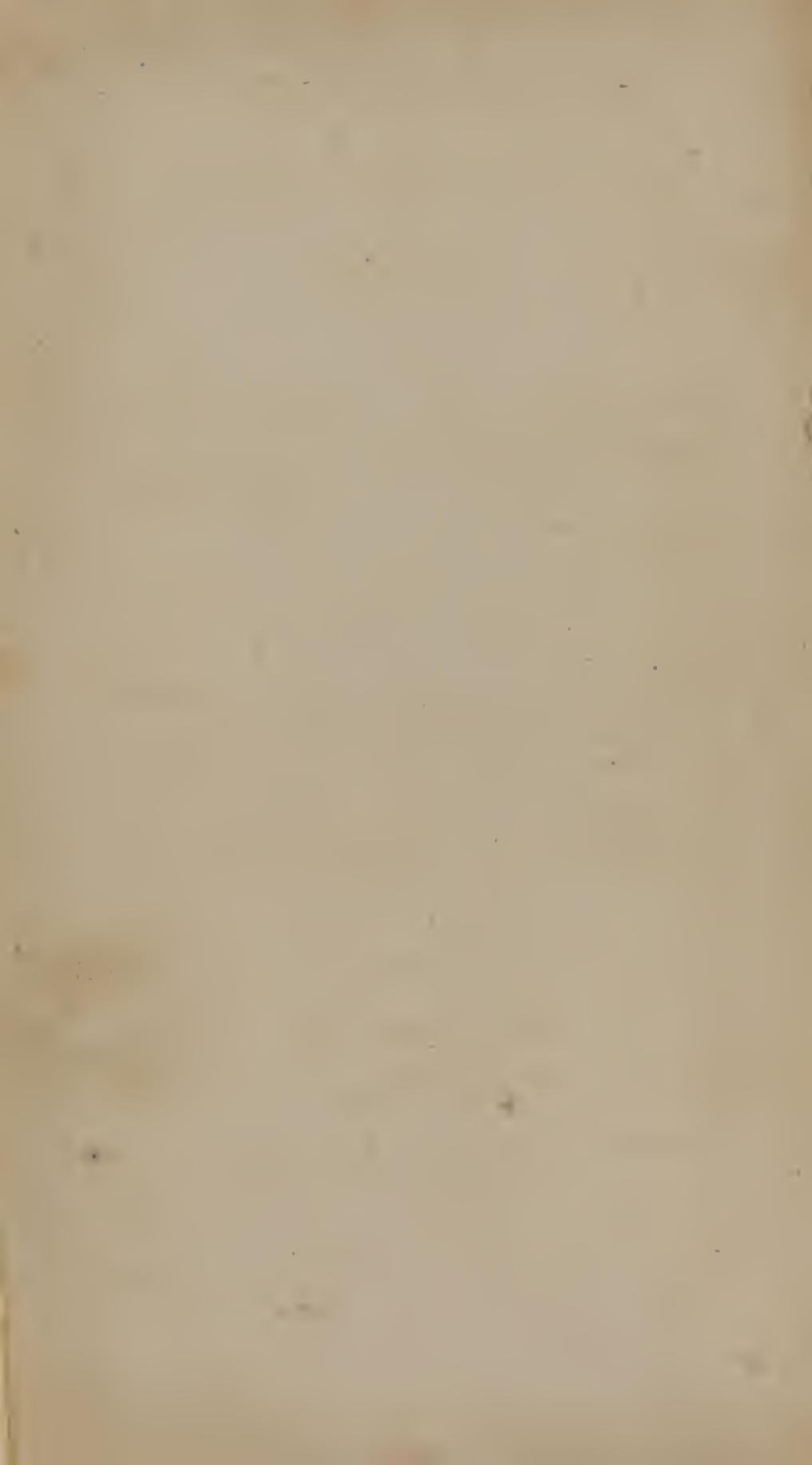


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DISCOURSES

ON THE

ELEMENTS

OF

Therapeutics and Materia Medica.

BY

N. CHAPMAN, M. D.

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"To communicate what I have tried, and leave the rest to others for
farther inquiry, is all my design in publishing these papers."

NEWTON.

VOL. II.

PHILADELPHIA:

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*Annex
Nat Hist*

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“N. Chapman, M D Professor of the Institutes and Practice of Phy-
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D. CALDWELL,
Clerk of the eastern district of Pennsylvania.

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ELEMENTS
OF
MATERIA MEDICA
AND
THERAPEUTICS.

DISCOURSE XXII.

Expectorants.

EXPECTORANTS have been defined “those medicines which facilitate or promote the excretion of mucus or other fluids from the pulmonary system.”

Considering the great importance of the lungs, and their appendages, to the well being of the animal economy, it is obvious, that a description of articles calculated to relieve any of the morbid arrangements of these organs, must have no slender claims to our attention.

Much difficulty has always been confessed, by those who have attempted an explanation of the modus operandi of this class of articles. It is conjectured by Cullen, that they may increase the

effusion from the arteries of the lungs, which being a thin fluid, dilutes the mucus of the pulmonary follicles, and by rendering it less viscid and tenacious makes its expulsion more easy.

Whether any of the expectorants act in this way has been doubted. But since a pulmonary exhalation does constantly go on, it seems to me highly probable, that we have medicines which increase this discharge, precisely as diaphoretics promote perspiration. It is, however, not less true, that all the means employed as expectorants do not thus produce their effects. Endowed with dissimilar properties, it is reasonable to presume, that the different articles may variously operate. To this conclusion, we can hardly help being conducted, when we reflect, how opposite are the states of the lungs in which we prescribe expectorant mixtures, and what essentially different substances we employ for this purpose.

Expectoration may be repressed, or imperfectly performed, by a constriction of the lungs, and, by the removal of which, an infinite degree of relief is often afforded. It is also apparent, that the lungs occasionally, from extreme debility, pour out an excessive discharge, and that by direct stimulation of the exhalents, the effusion is abated, and oppression removed, on the same principle as sweating is checked, by active diaphoretics, in hectic fevers, and other cases of extreme weakness.

Nor is it altogether unlikely, that some of the

expectorants are useful, merely by diverting action to the surface of the body, and, perhaps, as well by moderating pulmonary exhalation, as by relaxing spasm. To these may be added vomiting, which, partly by inducing relaxation, and still more by the mechanical force applied to the respiratory apparatus, very effectually expels the accumulated contents of the lungs.

It follows, therefore, from the preceding observations, that expectorants are to be considered in several points of view. But in all cases, and in whatever manner these medicines are productive of advantage, it is, by an impression first made on the stomach, and subsequently extended to the lungs, through the medium of that sympathy which so intimately and conspicuously connects these parts. Nothing is more absurd, or less to be reconciled with the present state of our knowledge, than the hypothesis which is to be found, even in the most recent of the writers on the **Materia Medica**, that expectorants operate by reaching the lungs through the circulation!

Two rules only shall I suggest for the administration of these remedies :

1. As in the use of diaphoretics, let the patient be kept warm. There is a very close consent between the skin and pulmonary organs, and we shall always perceive that moderate warmth, and even moisture, on the surface, greatly facilitates expectoration.

2. Carefully avoid purging. As remarked on a former occasion, none of the complaints of the lungs will bear this evacuation to any extent. Besides which, the action of the secretory vessels of the lungs, and intestines, would seem to be alternate and opposed. Expectoration, at least, is uniformly suppressed or diminished by diarrhoea or by purging.

Of Particular Expectorants.

It is not easy, so various are the properties of these articles, to arrange them, without a minuteness of classification, hardly admissible. But, perhaps all practical purposes may be attained by treating them, as I have done with respect to the other medicines, under the general division of the mild, and the active.

By some writers, the mucilaginous beverages have been placed among the more lenient expectorants, such as flax seed tea, or barley, or rice water. But, though these are useful in some of the pectoral affections, by doing away irritation about the fauces, and thereby palliating cough, they can scarcely be considered as expectorants, and may with more propriety be still designated, by the title of demulcents.

Of the milder expectorants, some of the emetic substances are deservedly most highly appreciated. But, of these, I have already said so much

under a preceding head*, that very little remains for me to add. It is sufficiently known, that the antimonial preparations, and ipecacuanha, are prescribed with this view, sometimes alone, though oftener in various states of combination with other articles, and occasionally to excite vomiting where the lungs are much oppressed.

LICHEN ISLANDICUS.

This is a plant which grows very abundantly in Great Britain, and in all the northern parts of Europe. As yet, I have not learnt that it has been met with in any section of the United States. The leaves are exceedingly mucilaginous, and in a recent state so bitter, as to be given as an anthelminthic. But by the process of drying they lose this quality, and afford a species of farinaceous matter, which we are told is worked by the Icelanders into bread. As a medicine, it has long been used in dysentery, and other bowel complaints, by the German physicians, and probably with success. It has too, for some time, been much celebrated in catarrhal and consumptive cases, and not a little evidence might be collected of its efficacy. But when we allow, that it is mildly nutritious, and that, like mucilages generally, it allays coughing, I suspect, as much is conceded as can be done consistently with a just estimate of its powers. Not more, at

* Emetics.

least, does my own experience with it warrant. As an expectorant, I am not aware that it has any claims, though it is sometimes assorted with these medicines. The common mode of preparation is, by boiling one ounce and an half of it in a quart of milk, over a slow fire, for fifteen minutes. If the milk is objectionable, on any account, water may be substituted. The quantity to be used is about a pint daily.

GLYCYRRHIZA GLABRA.

Liquorice is a perennial plant, native of the south of Europe, and may be naturalized in almost every climate. It is the root which is alone medicinal. This is possessed of many valuable properties, and is directed for various purposes. To the taste it is sweet mixed with some degree of bitterness, and is, perhaps, the only instance of a saccharine substance not occasioning thirst. On this account, it received the title of *Adipson*.

At one period, the infusion of liquorice root was greatly employed in the several relations of detergent, attenuant, diuretic, demulcent, and expectorant. But, at present, the use of liquorice is chiefly restricted to the alleviation of coughs, and a watery solution of the extract, alone, or in union with other articles, is commonly preferred. A mixture of this sort is admirably adapted to the advanced stages of the acute pneumonic affections, as well as

to consumption, and is greatly employed in the practice of this city.* I know not, indeed, any article, which seems to have in a higher degree, the quality of calming pulmonary irritation, than the liquorice. Either the solution, or infusion, of which I have spoken, answers well as a vehicle for the administration of many other medicines, the unpleasant tastes of which it disguises very effectually, and this applies especially to the Peruvian bark.

ARABICUM GUMMI.

It is said, that several different plants in Egypt furnish this valuable gum, though the purest sort is the product of the *Mimosa Nilotica*. It is imported from the Levant, and comes to us in small irregular masses, somewhat of a yellow hue, and the best is more or less transparent.

Of the gums, this is most generally employed, and for medicinal purposes might, with advantage, be made to supersede all its kindred articles. As an expectorant, it is prescribed in tickling coughs, and still more as a demulcent in dysentery, diarrhœa, cholera infantum, &c. Nearly with the same view, it is freely given to prevent, or remove strangury

* R. Extract. glycirrh. 3ij. aq. font. ferv. 3ijj. m. ft. solut. adde vin. ant. 3j. tinct. theb. gtt. xxx. m. Of this, a table spoonful is the dose.

from blisters, and to soothe the ardor urinæ attendant on the inflammatory affections of the urethra.

In pharmacy, the gum arabic is also found useful, "serving to suspend heavy powders in water, to diffuse oils, balsams, and resins in the same vehicle, and to give tenacity to substances made into pills."

As an article of diet, it is not a little prescribed, and particularly in the complaints of the alimentary canal. To this, we have probably been led by the notion of its light and digestible nature. That it is bland, and without stimulation, cannot be denied. But, I strongly suspect, that there are few matters received into the stomach which prove less tractable to the operations of that viscus. It passes through the bowels very little changed, as I have an hundred times observed, and, we are told, that it even reaches the urinary bladder pretty much in the same state. Nevertheless, there are not wanting facts to attest its nutritive qualities, and among others, the very strong one mentioned by Hasselquist, of its sustaining a caravan, for a length of time, whose provisions were exhausted.

ULMUS RUBRA.

Of the elms, this country furnishes several species, all of which are, perhaps, in some degree medicinal. But it is the red or slippery elm,* which

* *Ulmus rubra* of Muhlenburgh.

is mostly employed. The inner bark of this tree, by infusion, affords very abundantly, a viscid or mucilaginous matter, which is now, especially by country practitioners, extensively applied. As an expectorant or demulcent, it is a favourite remedy in catarrhs, in the declining stage of pleurisy, in consumption, &c. and, is also found, not less beneficial in the complaints of the urinary organs. But its reputation is still better established in diarrhoea, and above all, in dysentery. It is in these cases, directed to be very copiously drunk, and is alleged to answer sufficiently the double purpose of medicine and nutriment.

That it does good in dysentery, and even more than the other mucilaginous beverages, I am inclined to believe. To this point I have much evidence in my possession, though my own experience with it, is very limited. It is known to many, that the late Dr. Grant, of Virginia, had for nearly half a century an unrivalled reputation in the part of the country where he resided, in the management of dysentery. As he once informed me, his practice consisted in little more than purging moderately in the commencement of the case, and subsequently pouring in very freely the elm mucilage. By this alone, he declared, that the bloody stools, *tormena*, ^{2/} *tenesmus*, &c. were more speedily removed than by the ordinary remedies. Even admitting that one half of this statement is correct, the article will still appear strongly deserving of attention.

As an external application, it has not been less extensively employed. It forms an excellent emollient poultice, even milder, it is said, than the bread and milk, or flax seed. This is a good deal resorted to in country practice, in ulcers, recent burns, chilblains, cutaneous eruptions, and, in the discussion of tumors and other swellings. By many of our army surgeons, it is well thought of in gun-shot wounds, and is said, sometimes to be beneficial in arresting a tendency to mortification. Like other mucilaginous matters, it is nutritive, so much so, indeed, that it constitutes one of the resources of our Indians in extreme emergencies.

DISCOURSE XXIII.

The Subject Continued.

Of the Active Expectorants.

Excepting emetics, all the articles of which I have treated, may, perhaps, be considered as demulcents. If they have any expectorant power, it is in so feeble a degree, as hardly to entitle them to a place in this latter class. But, the medicines now to be enumerated, do most unquestionably operate on the lungs, and, in some way relieve those organs of their oppressive contents.

AMMONIACUM.

Ammoniac is a gummi resinous concrete, imported from Egypt and the East Indies. Of the tree which produces it, nothing is ascertained with certainty, though it is presumed to be the heracleum gummiferum.* As we receive it, it is in small

* Widenow, who raised the tree from seeds commonly found among the gum of the shops. It was before thought to be afforded by a species of ferula, of the same family as the plant that produces assa-fœtida.

round fragments, externally yellowish, and white within, of a faint foetid smell, and nauseous taste.

Ammoniac was once employed in a large circle of diseases, and especially as a deobstruent in viscerai obstructions. But it so completely lost its reputation, as no longer to be prescribed in these cases. Of late, I find, that on the continent of Europe they are recurring to its use, and I know it to have been a very favourite remedy of the late Dr. Wistar in hepatic obstructions. Whether it is really entitled to credit under such circumstances, my own experience does not enable me to say.

As an expectorant, its reputation is much better established. Confessedly it proves highly serviceable in all cases where the lungs are heavily oppressed. To the coughs of aged people, to some cases of pituitous asthma, to the advanced stages of pneumonia notha, and, sometimes to consumption, it is singularly well suited. The most common mode of administering ammoniac is in emulsion, denominated lac ammoniaci,* though it is occasionally prescribed in the shape of pills. Its dose is ten or fifteen grains. Excellent as are the powers of ammoniac, they seem to be improved, in most instances, by uniting with it squills, antimony, laudanum, &c. Nitric acid may also be added to it, as directed below;† and, from this mixture, I have

* Vid. Dispensatory.

† Pour very gradually two drachms of nitric acid, diluted in eight ounces of water, on two drachms of ammoniac, and triturate them in a

witnessed very good effects, where large accumulation of purulent or viscid matter existed, with feeble and difficult expectoration. Externally, ammoniac is applied as a discutient, in the form of a plaster, prepared by beating it into a soft mass with vinegar, and spread on leather. It is said to have done good in white swellings, indolent tumours, &c.

SCILLA MARITIMA.

This article has already been twice brought before us,* so diversified are its powers. No expectorant is more generally prescribed than the squill, or which, perhaps, is better deserving of confidence. But, it is actively stimulant, and requires to be directed with some circumspection. To the cases enumerated under the preceding article, it is best suited, and is very often united with it in the proportion of one or two ounces of the oxy-mel, or vinegar of squill, to eight ounces of the ammoniac emulsion. Exhibited alone, the dose of either of the above preparations is about a drachm. As an expectorant the squill in substance is rarely ordered.

glass mortar till the gum is dissolved, forming a milky fluid. Of this a table spoonful may be taken every two or three hours in sweetened water. Laudanum in some cases may be usefully added.

* Emetics and diuretics.

ALLIUM SATIVUM.*

The whole of the alliaciæ are expectorant. But the garlic is decidedly the most active, and in many of its qualities closely resembles the squill. It may hence be given in similar cases, and probably with equal advantage. As an expectorant, it answers best in the shape of an oxymel, which may be prepared by digesting the garlic in vinegar, and afterwards boiling the liquid with a portion of honey. The expressed juice, mixed with syrup, is often given, and after the reduction of febrile action, is one of the best remedies in croupy, catarrhal affections, and especially in children, and very old people.

FERULA ASSAFÆTIDA.

Commonly, this article is placed among the anti-spasmodics, and I shall, under that head, treat of its general properties. But, it is also decidedly expectorant, and in this view I must not altogether neglect it. Coughs connected with pulmonary weakness and tendency to spasm, are the cases in which it ought to be employed. Every practitioner of experience has probably seen it do good in tussis senilis, and of its great utility in the secondary

* Antilithics.

stage of whooping cough, there is even less doubt. The watery solution, is the only preparation now prescribed in these cases.*

ARUM TRIPHILLUM.

The Indian turnip is a native of the United States. The root, which is bulbous, is only used in medicine. In the recent state it is exceedingly acrid, emitting, on being sliced, a sharp pungent exhalation. But, by the process of exsiccation, much of this is lost, though, in swallowing, the acrimony is still sensibly felt about the fauces. Of all our indigenous plants, this has the highest reputation, at least in provincial practice, as a remedy in the pulmonary affections. It is habitually prescribed, in phthisis pulmonalis, in asthma, and protracted coughs. My experience with it is not extensive, though I have seen enough of its use to be convinced, that it is among the most active of our expectorants, and so far may be serviceable, especially in old catarrhs, and other pituitous cases. Experiments show, that like many other acrid articles, its effects are local, the general system not being at all influenced by any dose of it. The dried root, boiled in milk, is the mode in which it is given. As an external application in tinea capitis, tetter, &c. an ointment made with the recent root is much relied on in popular practice.

* Antispasmodics

POLYGALA SENECA.

This is a native plant, very abundantly distributed throughout the United States, though flourishing best in Virginia. The root, which is the only part medicinal, is contorted and tuberculated, as if composed of joints, and by an effort of the imagination has been assimilated to the tale of the serpent, the name of which the plant bears.

Early in the last century, the seneka was introduced by Dr. Tennent of Virginia, as a remedy in numerous diseases, and especially as a specific for the bite of the rattle snake, a case, in which it has long since lost all credit. But we have seen* that it is possessed of valuable properties, and I am now to say more of its utility in disease.

The seneka is indisputably among the most powerful and diffusible of stimulants, exciting arterial action, and promoting freely the secretory and excretory processes. It is, on this account, that it proves diuretic, emmenagogue, diaphoretic, sialagogue, as has already, more than once been noticed. But, perhaps, on no part of the system, does it exert its force more strikingly, than on the lungs and their appendages, the trachea and larynx. This is too conspicuously evinced to have escaped observation, and hence one of the very first applica-

* Diuretics, emmenagogues.

tion of the remedy was to the treatment of pulmonary affections.

To pneumonia, under almost all circumstances, it is, at least in popular practice, applied, and the confidence reposed in it, in some parts of our country, has long been, and continues, exceedingly high. Considering, however, its very stimulating nature, it becomes sufficiently obvious, that it ought not to be thus indiscriminately employed. Excepting typhoid pneumonia, it is wholly inadmissible in the early stages of the acute complaints of the chest. But after inflammatory action has been reduced by previous depletion, it comes in exceedingly well as an expectorant, and perhaps also, as having a tendency to relieve congestion of the lungs, by promoting determinations to the surface. It is in this way, that it operates so beneficially in the pneumonia of infirm people, which is always attended with debility of the pulmonary organs, and consequently, with large and oppressive lodgments of phlegm or mucus.

During the last twenty years, however, the seneka has, in regular practice, been chiefly in repute as a remedy in cynanche trachealis. It was originally brought into the treatment of this affection by Dr. Archer of Maryland, who spoke of its powers with unlimited praise. To every form and stage of the disease he thought it adapted, sometimes prescribing it as an emetic, and under other circum-

stances as an expectorant. It may certainly be so administered as to answer each of these purposes, though the more correct opinion seems now to be, that its use should be restricted to the secondary, or ultimate stages of the disease.

In my own practice, I have never attempted to do more with it. As an emetic, either the tartarised antimony or ipecacuanha has seemed to me preferable, as regarding certainty of operation, as well as inducing a greater degree of relaxation. But, to overcome hoarseness, and other sequelæ or consequences of the disease, I have found it exceedingly useful.

The seneka may be given in powder or saturated decoction. But the latter is greatly to be preferred in the cases before us.

CARBONAS AMMONIÆ.

Of this article, which is among the most important of the *Materia Medica*, I shall say a great deal in another place.* It may therefore, perhaps, be now sufficient to state, that it is habitually administered, and with great advantage, to relieve the lungs of oppression in the advanced stages of acute puermonia, sometimes in consumption, as well as in several other pectoral affections hereafter to be mentioned.

* Stimulants.

POTASSÆ CARBONAS,

ET

SODÆ CARBONAS.

Neither the vegetable nor mineral alkali has ever before been assorted with the expectorants. But that they operate beneficially in the diseases of the lungs, by favouring excretion, and restraining cough, is indisputable. It is well known that, of late, they have become very popular remedies in pertussis, with every description of practitioners, and the praise of originally directing them in this case, is accorded to Dr. Richard Pearson, of London. His prescription is as follows.* But at the moment that this preparation was generally employed in regular practice, a combination of the salt of tartar and cochineal† was put forth, I do not know by whom, and has gained such general confidence, as to supplant almost every other means in the treatment of the complaint. My experience with the two alkalis is now sufficient to enable me to pronounce with some certainty on their efficacy, and I do not at all doubt it. To the same purport

* B. Carb. sod. gr. iii. vin. ipecac. gtt. v. tinct. theb. gtt. i. aq. font. 3i. This is the dose for a child one year old, to be repeated every three or four hours.

† B. Carb. potass. 3i. pulv. cochin. gr. x. sacch. alb. 3i. aq. 3iv. Of this, half a table spoonful is the dose.

we have the concurrent evidence of many respectable physicians, and the popular voice, strongly expressed. That, however, the full effect of the medicine may be attained, it should be given in much larger doses, than ordered in the preceding formulæ.

Nor are the powers of the alkalis limited alone to pertussis. On the contrary, I am persuaded, that they will be found beneficial in all cases, where a mild expectorant, or cough medicine, is demanded. Of the comparative merits of the two, I cannot judge. Lately, I have got into the habit of prescribing the potash, and such appears to be the case with the other medical men of this city. But I am not aware, that this preference rests on any solid grounds.

In what manner the alkalis operate, in these affections, is not very intelligible. It is alleged that they do good by neutralising or correcting, the acid sordes of the alimentary canal. That accumulations of foul, acrid matter do exist, especially in pertussis, and that the lungs will be sympathetically affected, in consequence of gastric irritation, are facts as well attested as any in pathology. Coughs of an inveterate character, even running on to consumption, I have sometimes met with, which could be distinctly traced to this source. It is not, therefore, altogether improbable, that such may be the modus operandi of these substances. Nevertheless, I do not perceive the necessity of re-

sorting to a chemical solution of the problem. Contrary to common opinion, the alkalis really exert a pretty decisive agency on the system. This is illustrated in several diseases, and particularly, in those of a periodical nature. It is well ascertained that a few grains of the carbonate of soda, added to a very small portion of Peruvian bark and Virginia snake root, constitute one of the most efficacious remedies in ague and fever. As the alkalis act in these cases, so most likely, do they in pertussis by a strong and peculiar impression made on the stomach, and extended to the lungs by consent of parts.

COLCHICUM AUTUMNALE.

An oxymel or syrup of the meadow saffron, has been used as an expectorant on the authority of Baron Störk. I have not prescribed it myself, or seen it prescribed, and suspect, that in this view, it has very slender pretensions. Whoever is disposed to try it, should bear in mind, the great activity of the article, and accommodate it accordingly to the case. Elsewhere,* I have treated of this substance, somewhat at large, and mentioned particularly, its supposed identity with the *Eau Medicinale*. All that I have since learnt, goes to confirm the opinion, that the colchicum is the basis of

* Diuretics.

the French nostrum. The former has been used pretty extensively, of late, in the practice of this city, in arthritic and rheumatic affections, and generally, with conspicuous advantage. In every leading effect, the two articles are analogous. It appears, from the old writers on the *Materia Medica*, that the hermodactyle, a species of *colchicum*,* was, by the earlier physicians, much resorted to in gout, and who considered it so signally efficacious in the disease, as to bestow on it the title of “*animalia articulorum*.”† It is also strongly recommended in rheumatism. Besides which, it is ascertained that the hermodactyle enters largely into many of the most celebrated of the specifics for gout, such as the *dia hermodactylum*, the *pulvis arthriticus Turneri*, the *Vienna gout decoction*, the *mixture of Wedelins*, &c. It is also worthy of remark, that the effects of the first of these nostrums, as described by Alexander of Tralles, are precisely similar to those usually produced by the *Eau Medicinale*, and according to him, that people who take it are “*at once relieved of gout*.”

But to return to our immediate subject. Writers differ exceedingly as respects the degree of activity of the *colchicum autumnale*. By some it is represented as even virulent, while others treat of it as nearly inert. These contradictory statements can only be reconciled, on the supposition,

* *Colchicum Illyricum*.

† *Quincey's Dispensatory*.

that the plant is not, at all times, possessed of the same powers. The roots, I am inclined to believe, should be collected early in the season, though not till they have attained full maturity, and carefully dried previously to their being used. Like the squill, they contain, in the recent state, a large proportion of juice, which has little or no medicinal activity, though it is exceedingly acrid. Colchicum gives out all its virtues to alcohol, wine, or water, and a tincture, or infusion, may be employed. But the formula now commonly adopted is the saturated vinous tincture prepared with one part of colchicum sliced, and two of Spanish wine. As an expectorant, however, perhaps, the oxymel or syrup, might answer best.

BALSAMICA.

In the original acceptation of the term, *balsams* were those medicines by which wounds are healed, and of course included articles of very different qualities. But, the definition has been narrowed down so as to apply only to a set of fluid, odorous, inflammable substances, which closely resemble the terebinthinate preparations.

Consulting medical history, we shall find, that the vegetable balsams were once in such high repute, as to constitute the chief reliance in “colds,

coughs, and consumption." But, this vague and indiscriminate application brought them, after a while, into complete discredit, from which they have scarcely yet recovered. Among those that mainly contributed to their rejection, was the celebrated Dr. Fothergill, who loudly denounced the propriety of the practice, especially in phthisis.* As often happens in instances of this nature, he carried his objections too far, and has, in my opinion, done harm by abridging our resources.

No doubt, all the balsamic medicines are actively stimulant, and hence totally unsuited to the inflammatory state of any one of the complaints of the lungs, whether acute or chronic. But action having been sufficiently subdued by the direct depletory measures, I am sure, that they may be safely and advantageously prescribed in protracted coughs, and catarrhal consumptions. My own experience has satisfied me on this point, and without hesitation I recommend an imitation of the practice.

Numerous as are the balsamic articles, they still essentially correspond in their medicinal virtues, differing only as regards the degree of efficacy. As representing the whole of them, I shall only notice the Tolu, which I have found to be the mildest, the least unpalatable, and in every view, the most valuable as an expectorant.

* Vid. London "Medical Observations"

This is procured, by incision, from a tree of South America, the *Toluifera Balsamum*. The juice speedily thickens so as to become concrete, has a yellow appearance, is somewhat fragrant, and of a sweetish taste. Both water and spirit act upon it, producing a solution, the one called the syrup, and the other the tincture of Tolu. The dose of either preparation is forty or fifty drops, previously triturated with mucilage, which renders it miscible.

INHALATIONS.

Of these, it is proper I should say something as a means of promoting expectoration, and to meet several indications, connected with an oppressed or ulcerated condition of the lungs, they have been resorted to, and not wholly without advantage.

Every practitioner is familiar with the use of the vapour of water or vinegar in catarrh, pneumonia, asthma, and a variety of other affections, where expectoration is difficult and deficient.

To render this species of inhalation more stimulating, boiling water may be poured on Balsam Tolu, in the proportion of an ounce of the latter, to a pint of the former. This is well suited to those cases of the same diseases, in which the accumulations of the chest are owing to debility of the lungs, or are retained by the viscosity and tenacity of the matter. Mudge's Inhaler, so called from

the name of the inventor, is very convenient for the application of the remedy. But, where it cannot be had, a common tea pot may be substituted.

Nearly with the same views, sulphuric ether is strongly recommended, and we are told by very respectable authority,* that its powers are improved by several substances which are soluble in it. Cicuta is particularly praised, half a drachm of which, is to be digested in an ounce of ether, for several days, so as to form a saturated tincture. Of this, two or three tea spoonfuls are to be put into a wine glass, to be held up to the mouth, and inspired till the whole is evaporated. My knowledge of this remedy enables me to speak confidently of its utility. I have tried it, often, in dyspnoea from different causes, and generally with advantage. It is very useful, as was originally suggested, in consumption, and especially, if it be repeated several times in the day.

Not altogether dissimilar in its effects to these inhalations, is the practice of smoking certain substances. The tobacco is one of this description, and though according to Stahl, it affords no relief in ordinary catarrhs, it is highly beneficial in consumption. There is, probably, no foundation, for this distinction. But Stahl was so convinced of it, that he proposes it, as a criterion by which we may determine the precise nature of these cases. Certain asthmatic affections are those only in which

* Dr. Richard Pearson

I have been able to trace any utility from the practice. But, he who delights in cigars will tell us, that nothing more effectually promotes expectoration in recent catarrh, as well as in the chronic pectoral complaints.

During the last few years, no slight attention has been directed to the smoking of stramonium as a remedy in asthma, and other cases of dyspnœa. But strong as is the evidence adduced in its favour, I am inclined to suspect, that its powers are not considerable. My practice has presented me with cases suited to its exhibition, sufficiently varied, to determine its efficacy. In asthma, I have sometimes mitigated the force of the paroxysm by its use, though I am not sensible that I ever made any permanent impression on the disease.

To consumption, attended by violent cough, and impeded respiration, our medicine, in my hands, has proved now and then equally serviceable. It will, occasionally, under these circumstances, calm existing irritation, inducing a state of comparative ease, and, this it does, by its combined sedative and expectorant power. Even this, in many of the cases of this terrible disease, is a very desirable attainment. But, it is doubtful, whether it does more or even so much, as opium used in the same manner. It is the root of stramonium previously washed, dried, and bruised, that is employed for this purpose.

By some writers, and among these is Dr. Bree,

the author of a well-known Treatise on Asthma, it is asserted that the stramonium, when thus prescribed, is always useless, and very often highly dangerous, or even fatal, by producing apoplexy, and other serious complaints. To this, I can only reply, that my own experience teaches me differently. As yet, the only effects which I have observed from it, has been very analogous to those induced by the sedative influence of tobacco.

The practice has once more been revived in Europe and in this city, of attempting to heal ulcers of the lungs by the fumes of certain vulnerary and balsamic articles. What is the exact degree of benefit derived from it, I cannot determine positively. My own experience is not satisfactory, though I will not absolutely condemn the practice. More than one of my medical friends speak favourably of it, and I am not disposed to contravert or deny their statements. Candour, however, compels me to say, that as respects the terebinthinate preparations, and these are chiefly employed, I have uniformly found them so irritating, that they could not be continued without doing manifest harm. Even sulphur or mercury, both of which are much milder, likewise prove offensive to the lungs, and excite violent coughing.

I have said that this is an old practice renewed. By looking into the writings of more than a century back, we shall see, that the practitioners, of the time, were much attached to it. By Stahl, the

crude antimony is pointedly recommended with this view, and Bennet, in his work on Consumption, extols sulphur and the balsams. More recently, Mudge, to whom I have already alluded, prescribed the ether, tar, &c. and Linnæus the hypericum, a resinous substance. But, though the practice will probably be found not to answer the purpose proposed, it still may be occasionally recurred to, usefully, to stimulate the lungs to throw off their contents when loaded and oppressed.

As to consumption much more may, I think, be expected from tar fumigations as very recently employed. Encouraged by the event of an experiment, made on a patient, placed in a rope manufactory, Dr. Crichton, now physician to the court of St. Petersburgh, has treated some few cases of this disease, with triumphant success, by the fumigations more conveniently applied. The mode he pursues for doing this is, to put the tar in an earthen vessel over a lamp, or heated iron, so as to cause a volatilization, till the air of the ward is sufficiently impregnated, and this process is to be repeated three or four times a day.

Without entertaining any very sanguine hopes, that this, or any other means will prove essentially useful in genuine consumption, I would not, in the slightest degree, discourage a trial of this new plan. It comes to us on good authority, and surely nothing promises more in these deep seated ulcers, than healing measures directly applied, and tar,

on every account, its acknowledged balsamic properties in external sores, the tolerance of the lungs under the impression of its fumes, and the facility of its application, is the article which presents the strongest claims to our confidence and attention. To this it may be further added, as affording corroborative evidence, that a residence in the cedar and pine swamps of this country during the summer months, is well known, sometimes to have been productive of advantage in pulmonary cases.

DISCOURSE XXIV.

Emmenagogues.

THESE constitute a class of medicines which are supposed to promote the menstrual discharge. Of the precariousness of their operation, not a little has been said, it having long been a subject of complaint among practitioners, who are much consulted in the diseases of women. It does not seem to me that this uncertainty of effect is owing, as is generally supposed, to the want of a power in these medicines to produce specific impressions on the uterus. Many of them, unquestionably, are possessed of such a property. The true source of the failure of our practice in these cases, may, I suspect, be traced to the incorrect views which we have hitherto entertained of the process of menstruation, and still more, to our having overlooked, in the application of our remedies, the very different states of the system with which the suppression of the catamenia may be connected.

As yet, our practice has been, for the most part, exceedingly empirical. We have advanced blindly on, prescribing for the disease only, without adverting to those various circumstances which modify the action of remedies, and influence most materially, the ultimate results. To

avoid this error, I shall commence my account of **Emmenagogues**, with some brief remarks on the nature of this function. Contrary to a very generally received opinion, that the menstrual discharge is a mere effusion of blood, I hold it to be a *peculiar* fluid, produced by a *genuine secretory action* of the uterus. Could I indulge in any lengthened examination of the subject, it would, I think, be perfectly easy to show that every other hypothesis concerning this function, is utterly irreconcileable with facts, and repugnant to the laws of the animal economy. Many, indeed, of the crude notions of former times, in relation to it, may be considered as discarded. No one, for instance, at present, whose knowledge has kept pace with the improvement of physiology, thinks of imputing it to lunar influence, fermentation, venereal appetite, or general plethora. Local congestion is the only one of the older hypotheses which is now at all entertained. That there is an increased determination of blood to the uteris at the period of menstruation, cannot be denied. But what does this prove? Every gland, when excited by its appropriate stimulus, becomes a *centre of fluxion*, towards which blood is directed. This is common to all the secretory organs, though it is more strikingly observable, in those which are called only into action periodically. As the secretions are produced out of materials supplied by the blood, the effect which I have stated, is, indeed,

absolutely necessary to the due performance of the function, and so far, the hypothesis is well founded. But were this topical accumulation the only circumstance in the process of menstruation, the discharge should be *pure blood*, which confessedly it is not. Glands require, for the exercise of their secretory office, to be excited by some specific impression. The testicle is stimulated by lascivious desires to the elaboration of semen, and the uterus, in the same way, is called into action by an influence derived from the ovaries. That the latter is true, is sufficiently proved by the fact, that where these organs are wanting, or much diseased, a retention, or suppression of the menses uniformly happens.

It is not my intention to enter into a formal exposition or defence of the doctrine of secretion. My object, at present, is merely to bring forward a summary of the leading arguments by which it is maintained.

1. That the uterus in its villous, and vascular structure, resembles a gland, and also in its diseases, being equally liable to scirrhus, cancer, &c.
2. That, like other secretory organs, blood is very copiously diffused through it.
3. That, by the arrangement of its vessels, it is evidently designed, that the circulation should be retarded for the *purpose of secretion*. The arteries are not only exceedingly convoluted, but they are larger, and with thinner coats, than their corresponding veins. The "blood," says Haller,

.. is brought to the womb in greater quantity, and more quickly through its lax and ample arteries, and, on account of the rigidity and narrowness of the veins, it returns *with difficulty*."

4. That, in common with other secretions, menstruation is often, at first, imperfectly performed, and is subject afterwards to vitiation and derangement. In the beginning, the discharge is generally thin, colourless, and deficient, and recurs at protracted and irregular intervals, being analogous, in some of these particulars, to the seminal secretion.

5. That in many of the inferior animals, during the season of venereal incalescence, there is an uterine effusion, undoubtedly *a secretion*, which answers, seemingly, the same end as menstruation, namely, giving to the uterus an *aptitude to conception*, and though this fluid usually differs from the menses in complexion, it is, in some instances, precisely similar. Whenever the venereal desire suffers a violent exacerbation, from restraint, or other causes, the discharge, in these animals, becomes red, as has been more particularly remarked in bitches kept from the male.

6. That, when the menses are suppressed, they cannot be restored by inducing plethora, nor the flow checked by venesection, or any other means of depletion, besides which, no vicarious discharge relieves the symptoms of suppression. ?

Lastly. That the menses are a fluid *sui generis*, or, at least, varying very essentially from blood, hav-

ing neither its colour, nor odour, nor coagulability, and on chemical analysis present *different results*.

To the objection, which has sometimes been urged, that the uterus is not sufficiently glandular for the office alleged, it may be very satisfactorily replied, that there is hardly a viscus, or surface of the body, which is not competent to this purpose. It would really seem, that no operation of the animal economy requires a less complex apparatus. Of what, indeed, does a gland consist, except a congeries of vessels? Even the most perfect of the secretions are accomplished by this simple contrivance. If a few vessels, "creeping through the coats of the stomach," can secrete the gastric liquor, why may not the infinitely more glandular organization of the uterus, elaborate the menstrual fluid?

As yet we know of no glandular structure in vegetables. They contain only tubes or vessels, through which the fluids circulate. Notwithstanding, however, the want of glands, we find the sap of plants converted into oil, mucilage, acids, &c. Than this, surely no stronger proof can be required, of the extreme simplicity of the organs, by which the secretory transformations are effected!

Who originally suggested the theory of secretion, I have not been able to ascertain. It has very generally been ascribed to the celebrated Mr. Hunter, though, I suspect, on very slender grounds. The only trace of it, which I can discover in his writings, is a vague expression in a paragraph of his Treatise

on the Blood. Afterwards, however, he furnished an extract from his Lectures to be published in Johnson's Midwifery, as exhibiting more fully his notions respecting this function. Treating of the death of the blood from lightning, and other sudden causes, he includes the catamenia among the illustrations of his reasonings. "The blood," says he, "discharged in menstruation, is neither similar to blood taken from a vein of the same person, nor to that extravasated by an accident in any other part of the body; but is a species of blood changed, separated, or thrown off from the common mass by an action of the vessels of the uterus, in a process similar to secretion, by which action the blood having lost its vital principle does not coagulate."

By admitting the truth of the preceding theory, we have, at once, an explanation of the *modus operandi* of Emmenagogues. It follows, necessarily from the concession, that amenorrhœa is caused by an interruption of the secretory action of the uterus, and that the remedies which remove the suppression, operate by bringing the organ back to that precise condition, on which the exercise of this function depends. In order to effect this purpose, however, we must, in the first place, accurately ascertain the state of the system, and apply, with equal discrimination, the appropriate remedy.

Conformably to the preceding views, I shall arrange the emmenagogues medicines into such as are calculated to increase or to subdue action.

Of the Active Emmenagogues.

POLYGALA SENECA.

Of this article, I have already treated, under the heads of diuretics and expectorants. To Dr. Hartshorne, of this city, we owe the credit of having discovered its admirable properties as an emmenagogue. Conversing with him, some years ago, on the extreme difficulty of managing certain forms of amenorrhœa by the common remedies, he told me, that he thought he had used, with advantage, the seneka in these cases. Confiding in the accuracy of his observations, I determined to lose no time in making a trial of the medicine. This I have since done, both in my public and private practice, to a considerable extent, and with sufficient success to warrant me in recommending it as one of the most active, certain, and valuable of the emmenagogues. The seneka may be used either in powder or in decoction, though I greatly prefer the latter mode.* My rule in the administration of the medicine, in these cases, is to give about four ounces of the decoction, more

* In making the decoction, I put a pint of boiling water, to an oz. of the root, bruised, in a close vessel, and let it slowly simmer over the fire till the quantity is reduced one-third. Where the medicine excites nausea, which it is sometimes apt to do, even in small doses, I have it prepared with the addition of an aromatic, such as orange peel, or cinnamon.

or less, during the day, according to the circumstances of the case. But at the time when the menstrual effort is expected to be made, and till the discharge is actually induced, I push the dose as far as the stomach will allow, having given as much as two ounces every hour.

In the intervals of the menstrual periods, I always lay aside the medicine for a week or two, as, without these intermissions, if it does not lose its efficacy, it becomes nauseous and disgusting to the patient. While under a course of seneka, the general system is to be kept properly regulated, equally obviating excessive excitement, or debility, by the use of the appropriate remedies. Of all the emmenagogues which I have tried, this is the most efficacious, and will be found useful in all the forms of amenorrhœa, if administered with a due regard to the state of the system, and in other respects with correct discrimination. But I think it to be more particularly so, in those cases where the decidua exists. As yet, we are ignorant of the exact process by which this membrane is formed, though of this there is no doubt, that the vessels of the uterus, which pour out the catamenia, are the instruments by which it is accomplished.

Nor is it less certain, that while they are engaged either in the formation or support of this new production, menstruation ceases, the two offices exacting modes of action totally incompatible. It is obvious, under these circumstances, to change the

state of the uterus, and to excite it to a *secretory* effort, not only a *forcible*, but a *specific* impression must be made upon it. Deny to the seneka these specific energies, and where shall we seek an explanation of its effects? Were it simply a stimulant, or tonic, or sudorific, as is more generally supposed, it might induce excitement, or impart tone, or raise a diaphoresis, like many other articles of the *materia medica*, but would it be so signally efficacious as an emmenagogue?*

JUNIPERUS SABINA.

The savin is a species of the pine or cedar, and is a small evergreen shrub, with short, narrow, prickly leaves. When old, it bears dark blue berries. The leaves are the only part, at present, used as a medicine. They have a strong disagreeable smell, and a very acrid taste. Like the seneka, to which it is closely allied in many of its properties, it is a warm, powerful, and diffusible stimulant, producing an increase of all the secretions, and determined with particular force to the uterus. It was, on this last account, long used for the purpose of accelerating parturition, and more especially to expel the secundines. The same

* Much of what I have said, relative to the above article, was published in one of the early volumes of the Eclectic Repertory several years ago. My subsequent experience with the medicine, which has been very considerable, has served to strengthen and confirm my confidence in it.

view of its properties has led to its employment in order to procure abortion, in the inferior animals, and we have abundant proof of its success in these cases. By almost every one who has attended to the effects of our medicine, it has been remarked, that it is singularly prone to produce hæmorrhagy, and more frequently from the uterus than any other part. These properties obviously pointed it out as an emmenagogue, and, accordingly, it was, at a very early period, resorted to in cases of suppression of the menses, though the first distinct and satisfactory report which we have of its use, was made about half a century ago, by Dr. Home of Edinburgh, who gave the strongest testimony in its favour. But the higher authority of Cullen, by whom it is slightly spok- en of, seems to have abated much of the confidence previously inspired, and to have brought it, to a cer- tain degree, into disrepute. As an emmenagogue, it has, nevertheless, always been held in consider- able estimation, and is even now, extensively em- ployed.

Hitherto I have never had occasion to resort to this medicine in amenorrhœa. But were I to judge from its general properties, I should suppose it well adapted to some of the forms of this disor- der.

On the whole, I think the medicine worthy of a fairer trial, than perhaps has been made with it. Like the remedies generally, in amenorrhœa, I sus-

pect that it has been too indiscriminately employed. Whenever it is administered, we should recollect, how active are its properties, and, of course, that it is only applicable to such cases as are accompanied with extreme atony, and even torpor of the uterine system.*

RUBIA TINCTORUM.

The madder has, for some time, been celebrated as an emmenagogue. It is the root of a plant, cultivated in Holland, very abundantly as an article of commerce, which furnishes this medicine. Taken internally, madder tinges the urine as well as the bones of a red colour. It was on account of this wide pervading operation, that it came to be considered by the older physicians as a deobstruent, or remover of visceral obstructions. But by Cullen, it is thought to have something hurtful or injurious in its properties, and he therefore rather discountenances its use. As an emmenagogue, he seems to entertain not the slightest confidence in it. Many respectable practitioners, however, and among these the late Dr. Barton, make a very different report of the medicine.

“In my employment,” says he, “of the powder of madder, both in public and private practice, I have so frequently observed it to show considerable effects upon the uterus, that it is without any de-

* Diaphoretics.

gree of hesitation, that I speak of it as a remedy worthy of the attention of practitioners. It appears to be suited both to cases of retention and suppression of the menses, though it is chiefly in the latter condition that I have employed it."

Being convinced, that we are in possession of many articles of the same class infinitely more efficacious, I have never prescribed the madder. As generally recommended, the dose of this medicine is from twenty to thirty grains. Much more, however, may be given with perfect safety.

ROSEMARINUS OFFICINALIS.

The rosemary is another of those medicines which were once considered as powerfully acting on the uterus. This is a plant which grows wild in all the south of Europe, and is now cultivated in our gardens. It has an aromatic smell, and a warm pungent taste. Exhibited in the form of decoction, it is an active and diffusible stimulant, operating with considerable force on the nervous system, and hence is said to be serviceable in hysteria, palsy, vertigo, &c. As an emmenagogue, it has been very favourably mentioned by Bergius and other writers, though by Cullen it is contemptuously noticed. Notwithstanding this, however, I think that it is an article of considerable emmenagogue virtues. I have used it in several cases with unequivocal success. It is a highly popular remedy in this city,

and no doubt much good is done by it. The common mode of administering it is, to direct a tumbler full of the strong infusion for three successive nights, and then to intermit it for a short period.

MENTHA PULEGIUM.

As nearly allied to the rosemary in its general properties, I shall here introduce, with a few remarks, the pennyroyal. The pulegium has also been supposed to have a particular relation to the uterus, and hence its efficacy as an emmenagogue. By Linnæus it was indeed maintained, that every variety of mint acts so strongly on the uterus, that hæmorrhagy is very apt to be the consequence of its free use. But I am inclined to believe he was deceived in this respect. Certain it is, that his observations have never been confirmed.

Entertaining the same impression as to its power, Haller tells us, that the pulegium, combined with steel, is an infallible emmenagogue. But this is language infinitely too strong and unqualified, the medicine having been used by many practitioners without any such infallibility. Cullen, who is more or less a sceptic with regard to all the emmenagogues, speaks in the following terms of the pulegium: "Another use," says he, "of it as an antispasmodic has been commonly asserted, which is, that it assists the menstrual evacuations of the female sex. This, however, I believe to be on no

better foundation. At the time of menstruation the sex are often affected with dyspeptic, and spasmodic symptoms in the stomach, and I have known these symptoms relieved by an infusion of the pulegium, or as it is commonly called the pennyroyal tea. But the same relief has obtained more certainly by the use of peppermint, or the *mentha crispa*, though in none of them any specific power can be perceived. They have often been tried in cases of suppressed menses, and without any benefit at all."

As an emmenagogue, I am not prepared to advance any opinion on the pulegium, highly as it has been celebrated, excepting, that from the general properties of the plant, and its analogy to the rosemary, which I know to be useful, I should presume it not to be entirely destitute of such properties. It is a remedy in high repute in domestic practice, and popular confidence, even though confined to the vulgar, is scarcely ever without some foundation.

DISCOURSE XXV.

*The Subject Continued.**Of Mild Emmenagogues, &c.*

SECALE CORNUTUM.

I do not know that I am right in placing this article among the emmenagogues. But, I cannot give it another position with more advantage or propriety.

Of the natural history of this extraordinary production, I am not prepared to say much. Nor, indeed, is this exactly the place for such a discussion. It is sufficient for my present purpose to remark, that it has long been known, that more than one of the gramineous plants, as well as some of the grasses, are liable to a disease scientifically denominated *clavus*. The substance thus produced is, however, more generally recognised by the French vernacular title of *ergot*, or that of England and this country, the *horned rye*, *spurred rye*, &c. By medical men, it is called, as above, *secale cornutum*.

Of the different kinds of grain, rye, it would seem, is most apt to take on this morbid condition, and particularly in a low damp soil, or where it is exposed to an intense heat, succeeding to continued rains. It is further stated, that it occurs more

abundantly on the margin of fields, than in the central parts, and that new grounds, or those lately cleared, are more favourable to it than such as have been long cultivated.

Among the many conjectures as to its origin, it has been presumed to proceed from small larvæ, others have traced it to a species of fermentation, at least as a preliminary step, going on in the plant, and we have facts to warrant in a degree, the suspicion of its being propagated by contagion.* But on the whole, I think it is most probable that it arises, like the several sorts of smut or blight, from a mushroom of the genus *sclerotium*, which is of a parasitical nature.†

Ergot is an elongated excrescence, which fills the place of the seed within the glume or husk of rye. It is of an irregular curved form, something like the spur of a cock, of a dark colour, unpleasant taste, and brittle texture.

It has been a very generally received opinion in Europe for a century or two, that bread made of grain vitiated in this way, occasions diseases of a very extensive and violent description. Of these, however, the most common is a species of dry gangrene, pervading, at the same time, entire districts of country.

* The abbe Fontana planted a number of single grains of rye; and upon the top of each placed several grains of ergot. The result was, a crop of this substance, showing something similar to infection, which, however, might be owing to larvæ.

† This is the hypothesis of De Condolle

Disorders of a different nature, such as low fevers, and the various bowel affections, which prevailed, at one period, among our troops on the Canadian frontier, to an alarming extent, were ascribed by some of the medical men of the army to this cause, though on what foundation, I am not sufficiently informed to determine.

As an article of the *Materia Medica*, the credit of introducing it, must be conceded to this country. It is now eight or ten years since Dr. Stearns, of the state of New York, gave to the world an account of its wonderful powers in promoting lingering labours. By a very large number of practitioners it has since been tried with the same view, and though there may be some difference of opinion in relation to the degree of its utility, we have the most ample attestations in its favour. My own experience with it, which is by no means narrow, enables me to speak very positively of its powers in this respect, and the same impression is entertained of it by several of my medical friends, engaged in the practice of midwifery in this city. I have been supplied with some very strong facts of a similar purport by several of my correspondents, and still more might be collected from the medical journals of our country. But though its powers, in this respect, seem to be sufficiently admitted, some discrimination is required in the selection of the cases to which it may be suited, as well as caution, in the use of the article.

The mode in which I have been accustomed to prescribe it, is to dissolve a drachm of the powder in a small portion of water, and to give one third of it every half hour, till the effect is induced. Not more than ten or fifteen minutes elapse before the uterus is excited into strong and violent pains, which in all cases, that have come under my notice, continued with little or no intermission, or abatement, for a very short time, and then entirely ceased.

Considering the violence of the action of this medicine, it will always be prudent, previously to directing it, to ascertain that the os tincæ is pretty well dilated, as we shall expose the woman to much pain, or, perhaps, even to a rupture of the uterus, as has been suspected, may destroy the foetus. As the ergot has not the slightest tendency to overcome the rigidity of the soft passages, we must, under such circumstances, if delay be inadmissible, recur to copious venesection and other relaxing measures. With this precaution, I have every reason to believe, that the medicine may with perfect safety be used in lingering labour, and in almost every instance, with such effect, as to render unnecessary the application of the forceps.

It is not unknown to me, that it has been alleged against our medicine, that when given to accelerate parturition, it sometimes destroys the life of the child. Were it true, this would, indeed, be a most discouraging consideration. But, I am entirely convinced that the objection is unfounded. By my-

self, and other practitioners of this city, it has been used, in probably fifty or sixty cases, without doing harm in any respect, and which is pretty strongly confirmed by reports from other places. No doubt, however, from the protracted and difficult nature of the labours in which the ergot is prescribed, that the child will now and then be born dead, independently of any agency of the medicine, though no such instance has come within my own observation.

Experiments made with much accuracy, by more than one of the graduates of this University, show, that the ergot, in whatever manner given, has little or no operation on the system of the male. The pulse is neither elevated nor depressed by it, and excepting some nausea, or vomiting from large doses, no other effect is manifested. To the uterus, its whole force seems to be exclusively directed. Exhibited to pregnant animals, it never fails, in a short time, to occasion abortion, and in women, not with child, some uneasiness about the womb is generally experienced after taking it.

The strong affinity which it displays to the uterus would seem to give to the ergot strong pretensions as an emmenagogue. But repeated trials have convinced me that it is slenderly possessed of such powers. Nor, perhaps is it difficult to account for its inefficacy in these cases. As I have already stated, amenorrhœa depends on a wrong or perverted action of the uterus, for the most part,

slowly induced, and to remove which, a gradual and steady impression on that viscus is required. Now, of all the articles of the *Materia Medica*, the ergot is most transitory in its effects, and hence little suited to remove any obstinate or deeply confirmed morbid derangement. By its prompt and powerful action, it is much better adapted to some of the forms of *dysmenorrhœa*. I have seen it in two instances afford much relief by bringing away the deciduous lining of the uterus.

Much more advantage would appear to have resulted from its employment in uterine hæmorrhage, and which, indeed, might have been anticipated from its acknowledged power in exciting uterine contractions. As yet, I have never prescribed it with this view. But its utility rests on authority which may not be disputed. It is said more speedily than any other article to restrain floodings both before and after delivery, and that given during parturition, in women previously accustomed to profuse discharges, it acts effectually as a preventive. There may be some exaggeration in the preceding statement, though on the whole, I am persuaded, that, in this as in every other application of the article I have mentioned, it will be found essentially useful, and that in whatever light it may be contemplated, it presents the strongest claims to our curiosity and attention.

HELLEBORUS NIGER.

As an emmenagogue, the black hellebore was first introduced into practice by the celebrated Dr. Meade, who proclaimed its efficacy in the strongest terms. Influenced by his recommendation of the medicine, it continued to be almost universally employed, till the time of Cullen, who in the spirit of distrust which he entertained with regard to all these medicines, pronounced it to be a feeble and precarious remedy. Controlled by his authority, practitioners seemed for some time to have nearly abandoned it, but it has once more regained its reputation, both here and in Europe, and by some of our best practitioners it is indeed considered as the most valuable of the emmenagogues. Without going quite so far in its praise, my experience warrants me in saying that it has many just pretensions. It is especially useful when it purges, in painful menstruation, attended with torpor and constipation of the bowels, and perhaps, with some degree of insensibility in the uterus itself. Of the powder of hellebore the dose is ten grains, in the form of pills, which may be repeated for several days. As an emmenagogue, however, it is more common to prescribe the *tinctura melampodii*, the dose of which is thirty to forty drops, every three or four hours, gradually increasing the quan-

tity, so long as the stomach will bear it, without nausea or vomiting.

To the articles already enumerated, I might perhaps add the cantharides, the terebinthinate preparations, and phosphorus, each of which having sometimes been placed among the emmenagogues. But having tried the first two articles especially, to a sufficient extent to satisfy myself that they display no such properties, I shall dismiss them without any further observations. As respects the phosphorus, more will be said of it in this view when I come to treat of stimulants.

Connected as amenorrhœa is, very often with an exceedingly debilitated and flaccid condition of the system, the case will be found to be most advantageously managed, at least in the commencement, by the cold bath, exercise, change of air, generous diet, and by some of the tonic medicines, among which, the bark and the preparations of steel are to be preferred. Nor is it unusual, to unite with the preceding medicines the fœtid gums, or castor or musk, it being maintained, that certain states of amenorrhœa exist, in which they are serviceable, as where the suppression depends on an irregular convulsive action of the uterus. Of these antispasmodics, I have employed no one except the assafœtida. Hysteria, on some occasions, is observed to be symptomatic of derangement in the uterine function, and for the purpose of relieving this distressing affection, I have now and then given it, though not

with very pointed advantage. As emmenagogues, I hold, that the entire tribe of foetids to be inert, and if they ever do good, it is so rarely, as to have no solid claims to our confidence.

Next, I proceed to the second division of my subject, or to those emmenagogues which reduce action. It is by no means uncommon to meet with cases of suppression of the menses, where the pulse is active, the habit plethoric, with a flushed face, and even eyes inflamed, accompanied by pain in the back and head, and with acute and uncomfortable sensations of fulness in different parts of the body. No one could hesitate a moment under such circumstances, to resort to venesection as the most prompt and effectual remedy. It not only unlocks, as it were, the secretory actions, but it obviates the danger which is too apt to ensue from vicarious haemorrhages in the brain, the lungs, or some other vital organ. I have more than once seen, after a copious bleeding, the menses very speedily to flow, and the obstruction permanently removed. Nor should we neglect, as auxiliary means, to invite the circulating fluids to the lumbar region, by the interposition of active purgatives. As operating on the large intestines which lie in the vicinity of the uterus, the various preparations of aloes have been much cele-

brated. There can be no doubt of their superior efficacy. Either combined with calomel, or myrrh, aloes almost always displays very active emmenagogue powers.* With the same view of causing a determination to the parts, I have sometimes employed with marked advantage, blisters, and especially when applied to the inner part of the thighs.

Before entirely dismissing the subject of emmenagogues, I must say a few words in relation to one of the most distressing forms of amenorrhœa, and which, indeed, to a certain extent, demands a peculiar treatment. Menstruation is occasionally performed with great pain and difficulty, and the discharge comes away slowly and deficiently. This state of the uterine function is called *dysmenorrhœa*, and depends on

* Not the least valuable, however, of these combinations is one known by the name of Hooper's pills. These are made according to the annexed prescription:

R. Sal. mart. 3ss., pulv. jalap, 3i., hiera picra, 3ss., myrrh, 3ss., syrup com. q. s. ft. mass., div. in pill.

Of these pills, which are prepared of a convenient size, two or three are taken at bed-time, for several nights successively. They purge actively, and I presume it is by virtue of this property, that they operate so beneficially as an emmenagogue. In the original formula, I believe castor was added. The apothecaries of this city, however, have been induced to omit it, as rendering the pills offensive, without at all increasing their efficacy.

the imperfect secretory action of the uterus, by which sometimes an extraneous membrane is produced. The remedies here, are to be adapted to the condition of the system. Most commonly it is associated with increased action, and where this is the case, blood-letting is indispensable. The warm bath is highly serviceable, and also fomentations to the region of the uterus. The extract of hemlock and hellebore has been much extolled in these cases. I have no experience with either of these medicines. It would be well to experiment with the stramonium, and I have, indeed, used it advantageously. The remedy, however, in which I repose the greatest confidence in painful menstruation, is a combination of opium and camphor. I resort to it habitually, and scarcely ever without success. It is to be exhibited in the proportion of two grains of the one to ten or fifteen of the other. If the first dose should not answer, a second may be employed. But cases will occasionally occur where the sufferings are so severe as to demand the most immediate relief. Under such circumstances, an anodyne injection will sometimes operate very efficaciously.

To do away that state of the uterus, on which this particular form of amenorrhœa depends, I have already mentioned, incidentally, some of the best means. To these however, may be added, the volatile tincture of gum guaiacum. My knowledge of it is not great, having only used it in some few cases. But it is spoken of in very high terms

by Dr. Dewees, of this city, who has had much better opportunities of determining its effects.

He entirely concurs in the opinion which I have delivered, that difficult and painful menstruation is most commonly owing to the existence of the deciduous membrane, and that the healthy functions of the uterus can only be restored by its expulsion.*

After all, however, we are not to lose sight of the use of mercury in this disease. By a moderate salivation, continued for a week or two, we shall sometimes succeed in curing amenorrhœa, in its different forms, when every other mode of treatment has failed.

I have now completed the consideration of the remedies in amenorrhœa. It would have been easy to have swelled the number of these articles to an almost indefinite extent. In the uncertainty of our practice in these cases, we have floundered about, trying every variety of medicine, without rule or discrimination. By the manner in which I have distributed the articles, and the principles that have been suggested, I hope these medicines

* As the tincture he recommends is somewhat different from that of the shops, I subjoin his formula.

“ Rx. Pulv. gum. guiac. 3viii. carb. sod. vel. potas. 3ij.
pulv. piment. 3ij. alcohol. dilut. Ibii.

The volatile spirit of sal ammoniac to be added *pro re nata*, in the proportion of a drachm to every four ounces of the tincture, or less or more, agreeably to the state of the system.”

Vid. Coxe's Medical Museum, vol. iii.

may hereafter be administered less empirically than hitherto has commonly been done. But in the treatment of amenorrhœa, we must be prepared for disappointment. As already stated, the secretion of the menses is somehow influenced by the ovaries. These organs are liable to a variety of diseases, and when in this state, a suspension of the menses is always the consequence, and cannot be restored. Cases of this sort are, however, comparatively rare, and by constantly keeping in view the condition of the system, and applying our remedies accordingly, we shall seldom fail in the management of the different forms of amenorrhœa. To cure this disease is a matter of the utmost importance. No one state of the system has greater influence over health, or is attended with such extreme anxiety and distress to the female. As long as menstruation is interrupted, so long women are rendered uncomfortable, in mind and body.

Next to the stomach and brain, the uterus exercises the widest dominion over the animal economy, and regulates, in the greatest degree, its different operations. This viscus, indeed, was considered by the earlier physiologists, on account of its multiplied relations, as a distinct animal, controlling, with undisputed sway, all the functions of the body, whether in health or disease. Even more recently, the idea of its influence has been carried to scarcely

a less extent. It was thought by Van Helmont, that the uterus impressed all the peculiar and distinctive characteristics of the sex.

“Propter solum uterum mulier est, id quod est.”

It is on this account, that there is hardly a disease to which women are liable, that is not either produced, or aggravated by any permanent suspension of the uterine function. This is more particularly evinced in pulmonary consumption, being not only the frequent cause of this hideous malady, but, even where it takes place as an effect, it invariably increases its inveteracy, and heightens the difficulty of cure.

Whether amenorrhœa produces insanity, I am not prepared confidently to say. It is difficult, in public institutions, where I have chiefly derived my experience, to get the exact history of the cases which are introduced. Of this, however, I am entirely persuaded, that where the menses are suppressed, the restoration of the secretory action of the uterus is indispensable to recovery. Truly can I declare, that among the many women who have come under my care, I have scarcely ever been able to effect a single cure while the amenorrhœa lasted, especially if it had long existed. But often have I had occasion to remark, that the moment the discharge was induced, the mind became tranquil, and

with it a subsidence of all those turbulent actions which had previously so greatly disturbed the system. From the high importance of this function, therefore, it will always be right, in investigating the chronic complaints of women, carefully to ascertain the state of menstruation.

DISCOURSE XXVI.

Anthelmintics.

By anthelmintics, we understand those medicines which either destroy or expel worms situated in any part of the alimentary canal. This class is exceedingly extensive, and has been variously arranged. There is, indeed, hardly any article of the **Materia Medica**, which has not, under certain circumstances, evinced more or less of a vermisuge property.

The anthelmintics are endowed with very different powers, and operate in several distinct modes. There is one set which may be considered as poisonous to these animals. There is a second, which are mere evacuants of them, as the purgatives. There is a third, which are mechanical irritants. There is a fourth, which operate indirectly, by changing that condition of the stomach and bowels on which the generation, and, perhaps, subsistence of the worms depend.

By some writers, the preceding division has been made the basis of an arrangement of these medicines. I do not perceive any very serious objection to it, though as each species of worm requires, in

a certain degree, peculiar remedies, it will probably, in a practical view, be more advantageous to treat of them in this last relation. It is still, however, to be understood, that some of these articles are equally applicable to every sort of worm, and are thus indiscriminately employed.

The worms which infest the alimentary canal of the human subject, may be divided into round and flat, each of which forms, according to the strict rules of classification, a genus. The species of the round worm, are the *lumbricoides*, the *ascarides*, and the *trichuris*.

The *teres*,* as the first of these worms is sometimes called, resembles so nearly the common earth worm, that it has been considered as the same, or a variety of the same animal. By closely inspecting the two, however, a very material difference will be observable. The residence of the *lumbricoides* is chiefly in the duodenum, jejunum, and ilium. They are rarely found either in the large intestines or stomach. When detected in the one or the other of these places, they are, for the most part, endeavouring to escape out of the body, having been rendered previously uncomfortable by disease, or some active medicine.

The *teretes* are from five to ten inches long, and are often found to exist in very great numbers.

* *Ascaris lumbricoides*

Two hundred of them are recorded to have come away from a child of eight years of age in the course of a week, and I have known nearly half this number to be voided in a younger child in much less time.

The ascarides* are very diminutive, not being more than half an inch long, and resemble a fine white thread cut into pieces, and, by reason of this, are called *thread worm*. Commonly, they occupy the rectum, though in some instances they have been met with in the stomach, and hence denominated *maw worm*. Of the different species of worm these are by far the most common, sometimes existing in numbers, almost incredible.

The trichuris, or *long thread worm*, is about two inches long, with a tail twice the length of its body, having also a proboscis which it can protrude, or withdraw, at pleasure. It is of rare occurrence, and has not been very accurately described.† As yet I have never met with it. It is said to reside principally in the ilium.

Of the flat worms, the tænia is the only one. This is a very extraordinary animal. It is of great length, being often from ten to fifteen feet, and found curled up, or entangled like a bunch of tape, to which it has been compared. By the

* *Ascaris vermicularis*.

† I have not seen Hooper's book, which is said to contain a very accurate delineation of it.

late writers two species of *tænia* are described.* The extensive chain in the first of these consists of links, or joints, which occasionally fall apart, each one becoming a distinct worm, possessed for a time, of independent life, and from its resemblance to the seed of the gourd, called *vermis cucurbitini*. Each species resides in the small intestines.

The origin of worms would constitute a subject of very curious and interesting speculation. It belongs not, however, to my province to indulge to any extent in enquiries of this description. This would at once lead me into the intricate discussion relative to the generation and modes of nourishment of the whole tribe of parasitical animals, of which, indeed, little is satisfactorily ascertained. But, though not much has been determined as to the origin of worms, we are pretty well acquainted with the circumstances which favour their production. In all cases of diminished strength and emaciation of frame, however induced, and especially if the bowels share in this debilitated state, we may, in children, suspect either their existence, or speedy generation.

It has been observed that children after the first, and to the fifth year, are more liable to worms, than at any future period. Of this fact, there can scarcely be any doubt, though how to account for

* *Tænia osculis marginalibus*, and *Tænia osculis superficialibus*.

it, is not so easy. It has generally been imputed to the circumstance of their having at this early season, a larger quantity of mucus in the bowels, which is thought to serve as a *nidus* or matrix, for the generation, development, and support of these animals. This hypothesis unquestionably receives some support from the consideration, that a slim and penurious diet, consisting especially of crude vegetables, and unripe fruit, is favourable to the production of worms, and hence they always abound in the low and poorer classes of society. But, whence are derived the *principia* or rudiments of the animal? To this question, a satisfactory answer has never been given. It is alleged by some, that the primordial principle is taken into the stomach with food. But such a conjecture is refuted, at once, by the fact, that these worms are peculiar to the human species, not being seen in any other animal or position, and moreover, have sometimes been discovered in the stomach of *fœtus*'s and very young children, even within the month. Nevertheless, let it not be thought, for a moment, that I am disposed to lend any support to the antiquated notion of equivocal generation. By its adoption we should not be at all helped out of our difficulty, and certainly would depart very widely from a correct philosophy.

It has long been a matter of controversy among practitioners, whether worms are in themselves noxious, or ever prove the original or accessory

cause of disease. This point was once very warmly debated. While on the one hand it was maintained that almost all the complaints of children are influenced in a greater, or less degree by the irregular movements of these animals, it was on the other as strongly insisted, that they are entirely harmless, and therefore merit no sort of consideration. By some of these disputants it was even declared, that worms are highly useful in the animal economy, as executing the duties of scavengers, removing the indigested sordes, and preserving clean the stomach and bowels. Nothing is less correct, or would be more dangerous than this extravagant notion, if carried into practice.

Whoever is conversant with the complaints of children, and has attended to them, without any of those prejudices which pervert judgment, must acquiesce in this sentiment. I have had again and again occasion to witness a variety of diseases, which, either originated, or were kept up and aggravated by the irritation of worms. There is, indeed, scarcely a complaint which the presence of these animals will not excite or imitate. Cases are recorded, of their producing epilepsy, chorea, tetanus, apoplexy, mania, hydrocephalus, ophthalmia, perverted vision, paralysis, especially of the muscles subservient to speech, syncope, palpitations of the heart, hiccup, dry cough, pleuritic pains, consumption, cynanche trachealis, rheumatic

pains of the joints, dysentery, convulsions, &c. &c. To these may be added, a peculiar fever, termed verminosa febris. This is a slow and irregular remittent. The exacerbations are always attended with heavy drowsiness: the remissions with a morbid vigilance. There is pain in the bowels, and at the pit of the stomach, with occasionally purging, and a good deal of gastric distress.

The head is much affected, sometimes painfully, though for the most part, with stupor or delirium. The eye is wild, the pupil dilated, the alæ of the nose contracted, the cheeks flushed, the forehead polished, as if glazed. The case, in short, presents so many of the appearances of hydrocephalus, that it is easily mistaken for that disease. Two symptoms, however, most commonly attend, which are peculiar and distinctive. These are a very *strange alteration of voice*, and in some instances, a *total loss of speech*.

But, it is proper for me to state, that by Dr. Butter, a name which holds a conspicuous place in the annals of our science, it is positively denied, that this species of fever is at all occasioned by worms. It is contended by him, with no little plausibility, that it proceeds entirely from crude accumulations in the intestinal passages, and he recommends for its cure, purging. In a great majority of cases I am persuaded he is right, though it is still manifest, to me, that he has laid down his position too

generally, and without making those exceptions which are found sometimes to exist.

Considering, therefore, worms as a cause, and a very serious cause too, of disease, I shall endeavour to point out the symptoms by which the different species may be distinguished, and to assign to each the appropriate set of anthelmintics. As occasioning most of the affections which I have noticed, I shall commence with some observations on the lumbri-
coides.

It has already been mentioned, that worms may be suspected in a child where there is much emaciation, and especially weakness of the bowels, accompanied by discharges of slime or mucus. The reverse of this, is said, sometimes to happen, as the most robust and florid children will have worms, and suffer much inconvenience from them, without any serious detriment to health. But, cases of this sort are exceedingly rare, so much so, that I am not aware of ever having met with worms under such circumstances.

Among the more uniform symptoms of worms, are those of intestinal irritation, pains in the belly, alternations of diarrhoea, and costiveness, great thirst, variable and often voracious appetite. The child sometimes becomes hungry, almost immediately after eating heartily, and at other times, the appetite is feeble and depraved, soliciting strange and *outre* articles, as dirt, chalk, &c. Besides which, there is fetid breath early in the morning,

a pale complexion, with occasional flushes, swelling of the lips, and especially the upper lip, enlargement of the nostrils, a livid circle round the eyes, tumidity or distention of the belly at night. The sleep is disturbed, the child often awaking with great terror, and is liable to starting and grinding of the teeth. During the day he picks his nose, is tormented with temporary headach, sometimes has a dry cough, with a slow fever, and a disposition to spasmodic or convulsive affections.

Taken alone, no one of the preceding circumstances will be conclusive of the existence of worms.* But if several of them concur, there can be little or no doubt, of the fact, and we are accordingly to resort to the proper remedies.

* "The ambiguity of every symptom," says an intelligent writer, "ascribed to worms, except that of voiding them, is well known."

DISCOURSE XXVII.

Of Particular Anthelmintics.

Of these, one of the most efficacious is calomel, which should be given in the largest dose over night, and worked off the succeeding morning, by castor oil, or some more active cathartic. If the first dose does not answer, the medicine is to be repeated several times, at the interval of two or three days.

All the more drastic purgatives seem to possess in a greater, or less degree, the power of removing worms. The treatment indeed, in these cases, consisted at one time, very much in the employment of such articles. Whether they operate in any other mode than as mere evacuants is exceedingly questionable. Even in this way, they often prove serviceable, and especially as auxiliaries to the more determined vermisfuge medicines.

SPIGELIA MARILANDICA.

The pink root is an indigenous vegetable, which grows in all the southern states, and especially in South Carolina. Every part of the plant is possessed, in some degree, of the vermisfuge property,

though the root is incomparably the most active. This is a very powerful medicine, and sometimes induces all the effects of a narcotic poison. It is highly probable, that by virtue of this very property it proves so destructive to worms. But a different view of its *modus operandi* has been entertained by some, who considering it merely a purgative, refer to its action on the bowels, the whole of its vermifuge efficacy.

To this representation I cannot agree. Certainly, in my hands, the spigelia has several times proved useful without at all purging, though I think it more effectual when it does so actively. This medicine may be given either in powder or decoction. Of the former, the dose for a child is, from five to ten grains, and of the latter, an half ounce or more, to be repeated occasionally. But, which ever prescription is adopted, some brisk purgative should be added, and the calomel or senna is to be selected, as the one or the other mode of exhibition is preferred. By this combination, we unquestionably increase the power of the medicine, and entirely prevent the train of unpleasant nervous affections to which I have alluded.

Of late, we have a powder, prepared by an apothecary in this city, which has acquired no slender reputation in worms.

It is vended as a nostrum, the composition of which is endeavoured to be concealed, though it is ascertained to consist of equal parts of spigelia

and senna, with a small portion of the leaves of savin, the latter article having long been known to possess some vermifuge properties.

As an anthelmintic it is very efficacious, and I do not know than this, a better formula in most cases. Distinct from its vermifuge property, the spigelia has been thought to do good in irregular remittents. This was an opinion very early adopted by the southern physicians, and seems ever since to have been entertained in that section of the country. Of its correctness to a certain extent, my own experience has satisfied me, and I can hardly doubt, that every practitioner who has largely used the medicine must have seen it do good in the febrile affections, especially in children, though no worms were brought away.

HELLEBORUS FETIDUS.

This is a native vegetable, that is common also to many parts of Europe. As might be expected from the title, the smell of the recent plant is exceedingly offensive, and with a taste bitter, and remarkably acrid and nauseous. The fetid hellebore sometimes operates as an emetic and cathartic, though it is only used as a vermifuge: dried and pulverised, the leaves are commonly preferred for this purpose. The dose for an adult is from five to ten grains, to be repeated for several nights in succession.

Though I have never used the hellebore, I do not

distrust its powers. It is most favourably spoken of by some of the ablest practitioners in this country, and in Europe. There was formerly in this city, a Dr. Dewitt, who acquired immense celebrity in the treatment of worms by a medicine, the composition of which he disguised. But, ultimately it was discovered* to consist of this species of hellebore, and a small portion of ethiops mineral.

In the exhibition of hellebore, caution is necessary, it being poisonous, and sometimes operates very dangerously.

MELIA AZEDARACH,

The pride of India, has recently been much extolled, as an anthelmintic. It is a very beautiful tree, which now grows in the southern states. Denying it to be a native of the American continent, it is said by the naturalists to have been originally brought from Japan, and other parts of the eastern world. Be this so, or not, it has become completely naturalised among us, and flourishes well. It is known in different parts of the country, by various other appellations, as the pride of China, or China tree, the poison berry tree, or tallow tree.

As a vermifuge, the virtues of this tree reside in the root, or rather the bark of the root. The most

* By the late Dr. Kuhn

common preparation of it in the southern states, where it has hitherto been chiefly prescribed, is a saturated decoction, of which for an adult, a small tea cupful is directed for several mornings in succession. It may also be exhibited in powder, though the former preparation seems to be preferred.

My knowledge of this medicine is very narrow. But the few trials I have seen made with it, lead me to attach some value to it. In Georgia especially, it has become a popular remedy, and I am assured, that it is even more used, at present, than the *spigelia marilandica*. It is indeed considered by many respectable practitioners of that section of the country, as decidedly superior to all other medicines in the *lumbricoides*. Whether it is equally noxious to the other species of worms, does not so clearly appear. I have no knowledge myself of its utility either in *tænia* or *ascarides*. But I am told, that it has been advantageously employed in the first of these cases.

CHENOPODIUM ANTHELMINTICUM,

The Jerusalem oak, has long been distinguished as a vermisuge. It is a native of nearly every part of the new world. Being exceedingly hardy, it grows almost equally well under every degree of latitude, and in every variety of climate. It is found in Canada, and in the Brazils. No portion

of the plant is destitute of efficacy. Expressed from the recent leaves, the juice is sometimes given to children, morning and night, on an empty stomach. It is more common, however, to reduce the seeds, emphatically called worm seeds, to a powder, and to administer them in the same way, mixed with molasses or syrup. The dose must in most instances, be repeated for several days.

Lately, there has been extracted from the seeds of the chenopodium an oil, which has become a fashionable remedy for worms, especially in children, so much so, as nearly to supersede all other anthelmintics in the practice of this city. It is indiscriminately prescribed in every species of worms, and is thought to be highly beneficial.

For a child of two years old, the dose is six or eight drops morning and night. After continuing it for three days it is to be intermitted, and a mercurial purge given. If worms are not then discharged, and their existence still suspected, we may again recur to its use in the same manner as before. This is the substance of the printed directions accompanying the medicine. The dose, however, recommended is too small, and may be increased with safety and advantage.

To the oil as well as to all other preparations of the chenopodium, the chief objection arises from its very unpleasant nature. It is to the taste an acrid bitter, and has an odour singularly offensive,

and so tenacious, that nothing can dispel or mitigate it, for some hours. Could we dispossess the article of these qualities, it might be considered, perhaps, as the most valuable of all the anthelmintics, excepting the mercurial medicines.

All of the preceding articles are of the growth of our own country, and it is worthy of remark, that it furnishes so large a proportion of the active anthelmintics. I shall now introduce a foreign medicine, which perhaps should not be overlooked.

GEOFFRÆA INERMIS,

The cabbage bark tree, is a native of the West Indies, and particularly of Jamaica. The bark is the only part used as a vermifuge, and may be prescribed in the form of powder, decoction, or extract. But the decoction is generally preferred, and is prepared by slowly boiling an ounce of the dried bark roughly pulverised, or bruised, in a quart of water, till it assumes the colour of Madeira wine.

In the administration of this medicine we should proceed cautiously, as, in an improper dose, it will occasionally produce some very unpleasant consequences, such as violent vomiting and purging, delirium and fever. Even under any circumstances, it has appeared to me very apt to distress the stomach and bowels, and hence I have

been deterred from freely using it, especially in children, though I am not the less convinced of its efficacy. To this point we have the concurrent testimony of all the West India practitioners, as well as of many of those of Europe and this country. The dose of the decoction for an adult, is two table spoonfuls, of the extract three grains, and of the powder half a drachm. It should be repeated for several days, and then an active purgative exhibited. Those who are best acquainted with this medicine, direct that cold water should never be drunk during its operation, as it is prone to occasion very serious effects. Of this I know nothing myself, having indeed, very rarely used the article.

OF ASCARIDES.

Next, I am to say something of the management of ascarides. As formerly mentioned, these are a small worm which occupy the rectum, or at least most commonly the lower portion of the intestinal tube. They may be distinguished by the itching kept up in the anus, which sometimes amounts to an immoderate degree of irritation, and is generally aggravated in bed, so that sleep is often prevented. Even inflammation and a considerable swelling about the fundament, I have known to take place, accompanied with tenesmus and bloody stools.

To these symptoms may be added all the signs which denote the presence of the other description of worms. But there is one circumstance, which, in many cases, is conclusive of their existence. They are apt, especially when disturbed, to creep out of the rectum, and at all events they may often be seen entangled in the excrementitious discharges.

Of the general remedies in this species of worm, calomel in combination with some drastic purgative, seems to claim the greatest confidence. It has been a good deal prescribed by me, and with very variable results, having sometimes found it effectual, and in other instances, completely to fail, which however is pretty much the character of all the remedies.

ALOETIC PREPARATIONS.

As might be presumed, from their peculiar affinity to the rectum, the principal seat of ascarides, the aloetic medicines have proved occasionally serviceable. Exhibited in the ordinary way as a purgative, the aloes will sometimes answer exceedingly well. But I cannot help thinking, that the hierapiera, which is known to consist of aloes and canella alba, is a more powerful and efficacious remedy. Why it should be so, it is not easy to conceive, as the latter ingredient is in itself not active, and enters into the composition in a small proportion. But

it is idle to indulge in speculations relative to the operation of medicines.

Hiera picro is becoming very popular in this city, as a cure for ascarides, and I suspect deservedly. It has often succeeded with me, in cases which had previously baffled all my efforts. In the ordinary manner of prescribing it, an ounce of the powder is dissolved in a pint of ardent spirits, of which, being sufficiently digested, a table spoonful diluted may be given to a child three or four years old, in repeated doses, till it purges copiously. It is very probable that a watery solution might answer as well as the spirituous. But this is the common one, and having found it successful, I have not ventured on any innovation. The strength of the menstruum is much abated by the ingredients.

INJECTIONS.

After all, however, these cases will often be more successfully managed by injections. The worms being situated in the rectum, within the reach of the remedy, may be mechanically washed out, or, what oftener happens, are destroyed by the deleterious substances used for the purpose.

As an injection, nothing has answered better with me, than a drachm or two of aloes, dissolved in a pint of milk. But with the same view, lime water, olive oil, the juice of rue,

or tansey, or wormwood, an infusion, or the smoke, of tobacco, camphor tea, a solution of asafoetida, of the hepar sulphuris, of mercurial ointment, or of common salt, may all be tried. The last especially, I have prescribed with very unequivocal advantage.

The injections having been repeated, as often as may be deemed expedient, it will be right to give an active purgative. Being rendered sick and feeble by the previous remedy, the worms will now be readily brought away by the operation of the purge.

TRICHURIS.

Of this worm I have little further to say. It is to be distinguished, so far as I know, by no peculiar symptoms, and probably might be managed with equal success, by some of the means which are resorted to in ascarides.

TIENIA.

This is by far the most difficult worm to remove. We have no symptoms which very clearly distinguish it from the lumbricoides. Its existence, perhaps, is more generally attended by a steady gnawing sensation at the pit of the stomach, and by an indescribable wretchedness, which is always in-

cident to the gastric affections. Emaciation of the body is said more rapidly to take place from it, than the other worms, and in some cases, even amounts to atrophy.

MERCURIAL PREPARATIONS.

In the treatment of *tænia*, the mercurial preparations have been tried, and probably on the whole, with greater success than any other class of remedies. They are, however, extremely fallacious, having indeed, in the few cases which have come under my notice, proved altogether inefficient. But they have undoubtedly done good in the hands of other practitioners. I have used the calomel, ethiops mineral, and corrosive sublimate. The latter, which has recently acquired considerable reputation, should be given in solution, and in the dose of a fourth or sixth of a grain.

DRASTIC PURGATIVES.

Most of the drastic purgatives have, more or less, been used in *tænia*. This is especially the case with jalap, scammony, colycinthe, and above all, gamboge, which, in very large doses, is extolled as a sovereign remedy. Not less than twelve or fifteen grains will do, as the most active purging is necessary for the expulsion of the worm. Of this practice, my own experience will not enable me to

say much, though I am persuaded that the active cathartics will be found to be among our best remedies under such circumstances.*

THE POLYPODIUM FILIX MAS.

The male fern has been prescribed in *tænia* since the time of Galen. Too much has been said of its efficacy, in these cases, to doubt it altogether, and yet, from my own observations, I should be induced to rate its powers very low. The dose of the fern is from one to three drachms, to be taken in syrup, or simply washed down with water. To promote its operation, a strong purgative is to be given after a few doses, and if the worm be not expelled, the same course should be repeated.

By Cullen, it is thought very doubtful whether the fern has any anthelmintic property, he being inclined to suspect, that all the effects imputed to it, may be referred to the cathartic with which it is generally combined. This suspicion, however, does not seem to be well founded, as, in Germany, where the medicine is much employed, and is

* Gamboge enters largely into several of the nostrums for *tænia*. The famous specific of Herrenschwand, which, at one time, excited so much curiosity in Germany, was composed, according to his own declaration, of "from ten to fifteen grains of gamboge, with from fifteen to twenty of kali." But on being analysed by order of Elizabeth of Russia, there were found in it besides, both mercury and arsenic.

The specific of Clossius has also gamboge for its basis.

highly celebrated, it is always exhibited alone. Many cases might be adduced in support of its utility. There is one in particular related by Dr. Jones of New York, of a lady who, after taking numerous worm medicines, with little or no effect, drank a decoction of fern, a pint a day, till some gallons were consumed, when a worm came away measuring forty-five feet. It may be further remarked, in support of its efficacy, that the fern constitutes the basis of Madame Nouffleurs' well-known remedy for tape worm, the secret of which was purchased by Lewis XV. of France, at a very exorbitant price.*

The United States produce several species of fern, which probably possess the same powers as the European, though this is mere conjecture, as none of them, I believe, have hitherto been subjected to experiment. The most common American species is the *Polypodium Virginianum*, which

* These are substantially the directions of Madame Nouffleurs: "Three drachms of the root of the male fern reduced to a fine powder, and mixed with any simple water, and swallowed at a dose. Two hours after taking the powder, twelve grains of calomel, as much resin of scammony, finely powdered, with five grains of gutta gamba, must be taken in a bolus. If the patient is of a strong constitution, or been used to violent purgatives, this dose may be increased."

The following is the once famous prescription of Stoerk, with which, he says, he has "destroyed all sorts of worms:"

R. Sal. polycrest. pulv. jalap. —. valerian. aā 3j. oxymel scill. 3iv. m. exhibeatur adultis quater per diem 3ss. junioribus vero 3j. aut 3ij."

grows in the neighbourhood of this city, as well as in many other districts of our country.

DOLICHOS PRURIENS.

Cowhage is another remedy for *tænia*. This is a plant of the West Indies, and the parts used in medicine are the hairs or spiculæ attached to the pod. The operation of this article, is said to be purely mechanical, being supposed to prick the worms, and in this way to expel them out of the alimentary canal. It might be suspected that the same degree of irritation would be felt by the inner coat of the intestine, and that therefore the medicine might prove injurious. Experience, however, has taught the contrary. Taken in the quantity of a table spoonful mixed in syrup or mucilage, it is said to be both a safe and efficacious remedy. I have never employed it. It is highly extolled by many respectable practitioners.

STANNUM.

Either the filings of tin, or the powder made by heating it nearly to the melting point, and shaking it briskly, may be employed as an anthelmintic. The dose is one or two drachms, mixed with syrup, to be taken for several mornings in succession, and then purged off by an active cathartic.* It was

* Alston, who first recommended the tin filings in *tænia*, gave in some instances, an ounce at a dose.

long supposed that the efficacy of tin in these cases is owing to the arsenic which it contained. But, it has been found, that the purest metal answers as well, and its operation is now commonly referred to mechanical irritation. As however it is proved, that when reduced even to an impalpable powder, tin is not less effectual, this hypothesis must also be abandoned. Of late, it is conjectured that it acts merely by the hydrogen it generates in the alimentary canal, and which is supported by the allegation, that its powers are increased by a mixture with sulphur, by which sulphuretted hydrogen is evolved.

In addition to the preceding remedies, there is a variety of others which have been suggested at different times, for the cure of the tape worm, among which may be enumerated sulphur, the blue and white vitriol, arsenic, and very recently the rectified oil of turpentine. The last article, however, appears to me, to be the only one, the powers of which have been sufficiently attested, to be entitled to particular attention.

It is given in the dose of from half an ounce, to two ounces, in the morning when the stomach is empty. Commonly it excites an agreeable warmth without any sickness, or other gastric distress. After a while, however, patients are apt to complain of giddiness, slight pain in the head, and sometimes, when taken in the largest dose, of thirst,

and other febrile sensations. But these speedily pass away, leaving behind no serious consequences.

It appears that this remedy, which probably acts as a poison to worms, is most effectual when given by itself, and that strangury, and other unpleasant effects, are more likely to occur, if it be employed in the ordinary small doses, than when exhibited so as to purge. My own experience does not enable me to say much on the subject of this remedy in *tænia*, no unequivocal case having come under my care since I had a knowledge of it. Twice I have prescribed it, where I suspected the existence of this species of worm, and in one instance a very large number of *lumbricoides* was evacuated, while in the other, no such effect followed, though the symptoms which led me to its use were removed.

Yet of the utility of the turpentine in *tænia*, there can be no doubt. The late periodical journals abound with proofs of it, proceeding from some of the most distinguished of the English practitioners,* and it has been successfully used in this city.

Bold as the practice seems to be, I do not think we have any thing to apprehend from it. In one of the cases to which I have alluded, I gave a wine glassful of the turpentine for several days successively, and the man declared, he felt no more from it, than from the same quantity of ardent spirits.

Being so efficacious in *tænia*, it is reasonable to suppose, that the turpentine will prove still more

so, in the less intractable species of worms. The fact which I have stated of its evacuating the lumbricoides, is sufficient of itself to encourage us to a further trial in such cases.

I have now completed the consideration of the best means for the destruction or expulsion of worms. Little, however, would be accomplished in most cases, were we not to prevent their reproduction, which can only be done, by the removal of the causes that promote their generation and nourishment.

As formerly observed, every species of worm seems to have its origin and support in a weak and depraved condition of the digestive organs. The indication, therefore, is to restore to them their proper degree of vigor, which may be done by the exhibition of lime water, bitter tonics, the preparations of steel, and by a due regulation of diet, and whatever else conduces to the confirmation of health.

DISCOURSE XXVIII.

Epispastics.

THE etymology of this term warrants a more extensive meaning than is commonly affixed to it. Literally, it signifies *to draw*, and may be used in the same sense as *attrahentia*. But, as the epispastic substances generally excite a blister, the term is, at present, received as synonymous with *vesicatoria* or *vesicantia*. By the ancients, all the external applications which redden or inflame the skin, were called *epispastice*, and these were designated according to the several degrees of effect : the slightest entitled *phœnigmoi*, the next *sinapismi*, the more active *vesicatorii*, and the strongest *caustici*.*

In treating this subject, I shall arrange what I have to say under the three heads of *rubefacients*, *blisters*, and *caustics*. But as blisters are the most important, and will command the largest share of attention, it is right, perhaps, to commence with the history of these applications. Certainly by doing so, I shall escape from many repetitions, which otherwise would be unavoidable.

* Parr's Medical Dictionary.

BLISTERS.

By these we mean such external applications as cause the exhalants to pour out a thin serous fluid, separate the cuticle from the true skin, and produce vesication. The manner in which this is done is very intelligible, and admits of a plain and satisfactory explanation. By the irritating nature of the substance, the extremities of the arteries are excited to an increased exhalation or effusion, which is collected, and is retained by the impervious cuticle. But, of the mode in which blisters operate in the cure of diseases, we are still uncertain, though this is a point which at different periods, has occasioned numerous disquisitions, and eager controversies. It is fortunate, that the calm and attentive practitioner has pursued his path unmoved by these speculations, and carefully observing the effects of the remedy, has ascertained, with perhaps sufficient precision, the time and circumstances when it becomes proper to recur to it.

Nevertheless, I can scarcely admit of any unusual obscurity in the modus operandi of the vesicating applications. No one I presume, at present, could be found to support the ridiculous hypothesis, which referred the effects of blisters to the absorption of the acrid particles of which they are composed, into the circulation, and to the subse-

quent stimulation thereby imparted to the system. Many arguments might be adduced to show that even strangury is never occasioned in this way, much less that we are to seek an explanation of the general action of blisters in the process of absorption. Not, however, to press a point, which perhaps is of no great practical importance, I shall mention only one or two leading objections to the vulgar notion on this subject.

It seems to me, that if strangury do thus arise, it ought invariably to take place on the application of a blister. But so far from this happening with uniformity, it is an incident of comparatively rare occurrence. Nor does it less follow, that this affection ought always to be in proportion to the size of the blister and the time it is kept on. These circumstances, however, have little or no influence in the production of strangury. It is moreover known, that the internal use of cantharides is seldom attended by any such effect, and when it does occur, it is more frequently from small than large doses of the article.

These, perhaps, are reasons sufficient to refute the opinion to which I have alluded, without an appeal being made to the general improbability of any article reaching the circulation unchanged. It would really appear, in the case before us, that absorption is in a great measure suspended, since, were this process to go on, as usual, the fluid must be taken up as fast as it is effused, and no accumulation could take place.

What is the exact cause of this species of strangury is not determined, though, it is well known that a great variety of articles, besides cantharides, and some of these by no means of an acrid nature, will excite it. Thus it is pretty constantly brought on by the solanum nigrum, and I have seen it caused by camphor.* We have some cases recorded of its proceeding from the use of opium. Even the diuretics, and these too, of the mildest sort, including nitre, often occasion it. Whatever, in short, is possessed of a peculiar relation to the urinary organs, has a tendency, exhibited largely, to induce strangury.

As this is indisputably true, may we not account for it on the principle of extended action through the medium of sympathy? Cantharides are universally allowed to be one of the articles of the *Materia Medica*, which most conspicuously display their affinity to the urinary organs. Applied in the form of a blister to the surface of the body, they excite a local impression, which, by virtue of the consent of parts, is propagated in the mode I have just mentioned. This, at least, is the solution of the difficulty which accords best with my medical creed, and I think too, with the existing state of our medical intelligence.

Contemplating the action of a blister, two modes are presented in which it may be serviceable

* Heberden mentions a case of this sort, and I once saw it induced in typhoid pneumonia, from the free use of the medicine.

in the treatment of diseases. By the increased action which it excites, the primary effect of the remedy is indubitably stimulant, though, from the quantity of fluid poured out, it would appear also to be ultimately evacuant. But among experienced practitioners, little hesitation prevails as to which of these modes of operation, the best effects of blisters are to be ascribed. Excepting, indeed, some cases of cellular dropsy, I am not aware that any very great advantage is derived from this sort of depletion. Certain it is, that the relief afforded is not at all proportioned to the quantity of fluid evacuated, and very often, the most signal benefit accrues to the patient, where little or no discharge takes place. It hence follows, that the salutary tendency of these remedies is to be referred chiefly to the stimulant or incitant power which they possess.

Demonstrated by the clearest evidence, it is now a principle admitted with regard to the living body, that an existing morbid action may be removed by inducing a new and different impression, in the same part. It is on this principle, that we can explain the extraordinary efficacy of epispastics in all local inflammations. Nor is it less a law of the animal economy, that, in many instances, a very strong impression made on one part, has the effect of soliciting or drawing towards it, morbid action existing in some remote portion of the body. It is this, which we understand by the term revulsion,

and which we habitually perceive illustrated in the operation of vesicatories, and similar applications. But, blisters have a more pervading effect, and hence are useful in complaints of a general or constitutional nature. They act here, as in the former case, by their stimulating power, increasing the force of the circulation, and heightening excitement, as happens in typhus fever, and many other low diseases.

That these remedies are cordial and exhilarating is further proved, by their efficacy in all nervous affections, whether distinguished by a preponderance of mental or corporeal infirmity, and weakness. It is somewhere recorded of the celebrated **Mr. Dunning**, the eloquent barrister of the London bar, that on great occasions, when he was called upon to make the finest displays of his powers, either forensic, or parliamentary, he put on a blister, and found that while it elevated his mind, tone and vigour were imparted to his body.

It seems, on the whole, in estimating these remedies, it will be prudent as a guide, in practice, to consider them as stimulants, sometimes acting by inviting morbid excitement from distant parts, at other times, by producing local impressions which overcome the existing one, and as calculated generally to sustain, or revive the strength of the system. But, it is not be concealed, that very different views have been taken of their operation, and among others by **Cullen**, who depreciating the sti-

mulant and evacuant effect, is disposed to ascribe their utility chiefly to the property they possess of relaxing spasm.

That they are, to a certain extent, antispasmodic, is sufficiently shown by the great advantage derived from them, as we shall hereafter see, in very many of the spasmodic affections. But this they do by a mere modification of the stimulant power, in the same way that they tranquillise the system and compose to rest, under circumstances of excessive mobility, either natural, or acquired, as in certain cases of morbid weakness.

Next I am to make a practical application of blisters to the cure of diseases, and, considered in this light, they become exceedingly interesting and important. But as preliminary to the main discussion, I shall suggest some few rules for their employment.

1. Let the blister remain on till it draws effectually, and the ordinary time required for this purpose is ten or twelve hours. But on the head, at least double this period, and here to prevent strangury, the hair should be removed several hours previously to the application of the blister, if such a delay be admissible. Children, owing to delicacy of skin, are much more speedily blistered, and hence in their cases, it may be earlier removed. Being continued too long, it is apt to induce gangrene, as I have witnessed in two or three instances.

2. It will be right, especially in local affections,

and in the whole of the phlegmasiæ, to apply the blister as nearly as possible over the immediate seat of the complaint, its efficacy, thereby, being very much increased. Let it also be as large as the nature of the part will allow. Large blisters give no more pain, and are generally beneficial in the ratio of their dimensions.

3. In those individuals liable to strangury, or where, from peculiar irritability, much pain is excited, it will be proper to remove the blister after two or three hours, or as soon as the rubefacient effect is produced, to bathe the part with a mixture of olive oil and laudanum, or fresh lard, and re-apply the blister. This will sometimes succeed in doing away the inconvenience. But if it fails, a soft emollient poultice may be substituted, which, so far as I have tried, uniformly soothes irritation, and produces well filled vesications. As preventives, it will also be prudent to direct the free use of diluent beverages, as flax seed tea, barley water, or a solution of gum arabic. To cure strangury, these same drinks are serviceable, though not so much so as the parsley or wild carrot tea. But if the affection be violent, as sometimes happens, we must resort to more efficient remedies, such as fomentations to the pubes, or the warm bath, or to camphor, balsam copaivæ, and above all, to opium, and particularly in the form of an enema.

4. Never recur to blisters in diseases of the higher grades of action, till in some degree re-

duced by venesection and other depleting measures. Too early employed in such cases, they hardly ever fail painfully to increase irritation, and exacerbate morbid excitement.

5. In the very advanced stages of disease, blisters should be applied to the thighs, shoulders, back, neck, breast or head, and never to the ankles or wrists, as here, on account of the lowness of temperature and feebleness of action at the time, they either do not draw at all, or if they do, it is imperfectly, occasioning weak erysipelatous inflammation, which is apt to become gangrenous.

6. In putting on a blister, care should be taken to adjust it to the part, and so to apply the bandages, as to secure it against slipping, which gives unnecessary pain, and prevents its drawing well. By strips of adhesive plaster this may be done, and they will be found exceedingly convenient in the application of blisters to portions of the body in which there is much motion, as to the sides, neck, &c. It is a common practice to bathe the part previously with warm brandy or vinegar, in certain cases, however, where the drawing of the blister is doubtful from a low state of system, it will be better to excite irritation by frictions with the spirit of turpentine, or by a sinapism.

7. The usual dressing for a blister is simple cerate spread thinly on linen. If there is much irritation, lard perfectly fresh should be preferred. To keep open a blister the weak epispastic, or savin ointment is employed.

DISCOURSE XXIX.

Of the Practical Application of Blisters.

CONFORMING to the course which I have hitherto pursued, I shall commence with some remarks on the use of blisters in the febrile affections.

As a remedy in intermittents, they are not generally employed, though undoubtedly, sometimes are useful. I have in more than one instance seen them successfully applied as a preventive of the paroxysm, so managed, as that the full impression shall be felt at the anticipated moment of attack. Even, where the effect is not so striking or immediate, they are not without utility. Constantly kept up on the extremities, the irritation which they induce, will, after a time, so interrupt the trains of morbid association, constituting this form of fever, as frequently to put an end to the worst cases of it, acting here very much on the same principle as a mercurial salivation. Nor are they less demanded, in those cases of the disease, attended by visceral congestion, or indurations of a painful and inflammatory nature. Little, indeed, will tonics avail, till such obstructions are removed, and with this view, a succession of blisters on the affected part ought never to be neglected.

In relation to continued fevers, there is a wider

difference of opinion, as to the propriety of the vesicating applications. By some writers, they are altogether condemned, and among these, the most distinguished by weight of authority, is the celebrated Fordyce. It was one of the notions of his great and original practical mind, that blisters have not the slightest tendency to arrest the progress of fever, maintaining, indeed, on the contrary, that by the new irritation which they occasion, they prove an accessory cause.

Perhaps, it is not difficult to reconcile the contrariety of sentiment on this point of practice. Nothing is more opposite than the effect of a blister, in the early and advanced stages of fever invariably doing harm, while there is much arterial action, and as uniformly proving beneficial in properly reduced states of the system.

The continued fevers of this climate are either bilious inflammatory, or the typhus of crowded and ill ventilated places, the latter, however, occurring rarely, and scarcely ever, except in winter. My practice is to recur to blisters in the former of these fevers, whenever I find the disease to continue, after thorough evacuations of the alimentary canal, and blood vessels, and especially, if there be displayed any typhoid disposition. Blisters, under such circumstances, should be applied to the extremities, and by the stimulation which they impart, are often productive of manifest advantage.

But, in the yellow fever, a disease essentially dissimilar, though it has been maintained to be the same, in a more aggravated shape, blisters may be earlier resorted to, and differently applied. Taught by dissection, as well as by the leading phenomena or symptoms, that the stomach is the seat of this pestilence, inducing a malignant gastritis, a prompt application of a large blister over the region of this viscus is obviously indicated, and all experience confirms its utility.

As regards typhus fever, a course somewhat different should be pursued. It seems now to be ascertained, that the brain is the part on which it mainly expends its force. We have in the commencement of the disease evidence of a great determination to this organ, and not less in the subsequent and advanced stages. Now the plain and intelligible indication is, to prevent or do away congestion or inflammation, and which is most effectually accomplished, by local measures, such as cold applications, topical depletion by leeches or cups, and finally, a blister, of sufficient dimensions, to embrace the whole cranium.

It is not unknown to me, that objections have been raised to the last of these remedies. But they rest on no solid foundation, and are contradicted by the tenor of medical experience. There are certain points of practice so firmly settled as no longer to be disturbed by cavillers or wild speculators, and among these is the efficacy of a blister to

relieve the head in typhus fever, and especially where delirium exists. As well indeed, might a practitioner rise up and deny the power of bark in intermittent fever, or mercury in syphilis, as that of a blister in the case which I have mentioned. Eccentricities of this sort are common in the history of the human mind, and from which we have no reason to hope that our science should escape.

Considering the immense influence which recent experiments have proved, that the spinal marrow indirectly exercises over all the great functions of the animal economy, it seems not at all improbable, that much advantage might result from blisters and such like applications to portions, or, perhaps, in very obstinate cases of fever, to the whole of the spine. Nor are we entirely without facts to verify this conjecture, though these are derived, more from a trial of the remedy in the nervous and spasmodic, than febrile affections.

To sustain the system in the sinking condition of typhus fever, it is a very favourite practice with many to apply blisters to the extremities. That they occasionally do good can hardly be doubted, yet they often fail to draw at all, and, even where we succeed, in this respect, the action produced seems not always to be a very salutary one. As a more certain means, at least, of stimulation, sinapisms, or rubefacient embrocations, have been preferred, at this conjuncture, and, perhaps, on the whole they will be found to answer best.

Of the order of phlegmasia, I know not a single case, in which blisters are not employed. But of the numerous affections comprehended under this term, there are some in which the remedy is more particularly demanded. Every practitioner is aware of its efficacy in the whole of the acute pneumonic cases, though some discrepancy of opinion may be traced, as to the time when it should be applied. My own rule, and which I have reason to suppose is sanctioned by the best authority of the present day, is to postpone the blister, especially in pleurisy, till some considerable reduction of arterial action is effected. At this precise period, they prove unequivocally useful by extinguishing the remnant of pain or oppression, and seem to arrest the further march of the disease. But earlier than this, I have found that they scarcely fail to occasion great distress to the patient, and assuredly aggravate the symptoms which they are intended to relieve.

Candour, however, compels me to confess that an opposite course is pursued by some of the ablest practitioners of this country, and of Europe, and with alleged success, to which I can only reply, that the counter evidence decidedly preponderates, and that my own experience, which I slowly give up to any one, tells me that I am right.

The preceding remarks have a reference only to confirmed, ordinary pleurisy. Either in the *form-*

ing state of this very disease, or where it occurs in a debilitated system, and in the peripneumonies of aged people, a blister may unquestionably be applied, at once, without any preliminary depletion.

To the anginose affections, blisters are well suited, and particularly to cynanche tonsillaris, and trachitis or croup, though their application should generally be preceded by pretty active evacuations, and if attainable, by topical bleeding with leeches.

Of the inflammatory affections of the alimentary canal, there is no one in which blisters are so unequivocally useful as gastritis itself. Excepting, indeed, venesection, they are the only remedy entitled to much confidence in this case, and the same may be said of enteritis, &c.

Dysentery, though not thus *located* by the nosologists, is indisputably, when it assumes the inflammatory shape, a case of this order. Most writers agree as to the utility of blistering in this disease, differing, however, in relation to the part where the application is to be made. Influenced by the apprehension of excessive pain when made to the abdomen, the extremities are very often preferred. This is an instance of mischievous lenity, proceeding too, I am persuaded, from an erroneous impression. Delayed, which it ought always to be, till the force of inflammatory action is abated, it then is productive of comparatively little distress while drawing, and sometimes by the ease and comfort which it affords, even

composes to sleep. To the extremities blisters are, on the contrary, more painful, and of no avail unless the case be so far reduced, or protracted as to partake of the nature of diarrhœa, or is blended with intermittent fever.

Cholera morbus is another case in which blisters are employed. To check vomiting, they are often applied over the stomach, or to the extremities. Either position will do very well, though, in exhausted states of the system, the latter is to be preferred. These remarks are equally applicable to cholera infantum, with this difference only, that blisters, here, are more rarely, and never so urgently required.

Not less to overcome the spasm, which causes the pain and obstruction, than to obviate inflammation, blisters are one of our most effectual resources in cholic, and on no occasion, perhaps, more conspicuously manifesting their antispasmodic power.

It would be superfluous to go through in detail the several visceral inflammations, such as hepatitis, splenitis, and nephritis, since, in the use of the remedy, we are governed by one common rule, namely, to withhold its application till the force of the case is broken, by previous depletion. As some practitioners, however, distrust the propriety of blistering in the affections of the kidneys, from the fear of inducing strangury, or otherwise adding to the existing irritation, it may be useful to observe,

that actual experience has shown the fallacy of these speculative objections, and fully attested the safety and efficacy of the practice.

Of the utility of blisters in rheumatism every one is persuaded. Yet even here they are productive of harm, if prematurely applied, and where it can be conveniently done, should be preceded by a local detraction of blood. My conviction is, that they are infinitely better adapted to chronic than acute rheumatism, almost always proving serviceable in the former instance, and especially when they induce the suppurative process.

By some writers it is recommended to blister the affected part in regular gout, and, as it proves so beneficial in analogous cases, we might imagine that it would be attended with the same results. But on trial, I have been disappointed, and applications of this nature are no longer employed by me. It has indeed been alleged, that blisters have the effect of repelling the disease on some internal part of more value to life, and hence are hazardous measures. Experience, however, has taught me, that such applications are the very best means to invite, and fasten down, if I may use the expression, gout on the extremities, and I can have no idea of a remedy blowing hot and cold in this way.

Nevertheless, in misplaced or retrocedent gout, whether it attacks the alimentary canal, the lungs, brain, kidneys, or any other portion of the body,

blisters over the immediate seat of the complaint are highly serviceable and sometimes, even indispensably necessary.

As one of the best means in phrenitis, they are much used, and such is the fact, in relation to all the affections of the brain, partaking, in any degree, of inflammation or congestion. No one disputes their utility in apoplexy, though doubts are entertained whether they should be put on the head or lower extremities. My own impression is in favour of the former position, and which is derived from comparative trials on a scale sufficiently extensive to determine the point. Of their use in paralysis, I have before said so much as to require no further notice.*

As a remedy in mania, blisters have been generally extolled. To be serviceable, however, they require to be used with great discrimination. Directed too early, or while much arterial action exists, they invariably do harm. But the system being reduced by copious evacuations, they are well calculated to subdue turbulence, and equalize excitement. It is common to place them on the head, and here perhaps they are most effectual, though while drawing, I have uniformly found that they produce an increase of the disease. If therefore such an exacerbation is particularly to be deprecated, it will be prudent to make the application

* Cathartics

to the limbs, and this position should also be selected in melancholia, and other weak forms of the disease, where it is desirable to arouse the system out of its torpor by vigorous stimulation.

Elsewhere I have said, that hydrocephalus consists in a peculiar action of the vessels of the brain, connected with a depraved condition of the chylopoietic viscera.* As a part of the treatment of this case, blisters to the head are greatly relied on, and I believe deservedly. But we are to bear in mind, that they prove effectual, very much in proportion to the time they are kept on, and most so, when suppuration of the scalp takes place.

Of the treatment of ophthalmia, and some other affections of the eyes, blisters constitute an essential part. It is customary to apply them behind the ears, or to the temples, or back of the neck, affording most relief in the last named position, where the attack is obstinate. Applied to the brow, they are sometimes very successful, and may be put in certain cases over the orbit of the eye itself, by previously closing the lids with a thin strip of adhesive plaster.

In more than one of the profluvia, or diseases attended by increased discharges, blisters are occasionally directed. Applied alternately to the ankles and wrists, they will very frequently relieve cases of protracted diarrhoea which have resisted every

* Cathartics.

other means. Much advantage have I also derived from them in leucorrhœa. They are sometimes beneficial on the lower extremities, though incomparably more so, when put over the lumbar vertebræ or sacrum. Of their use in gonorrhœa, and gleet, I have learnt little from my own observations. The practice, however, is commended by some of my medical acquaintance, and seems entitled to a share of confidence. Even still less do I know of their powers in diabetes. My opportunities have been slender of seeing this disease. But all the cases of it which have come under my notice could be traced distinctly to gastric derangement. Nevertheless, the kidneys, though secondarily, are always much affected in it, and for the purpose of calming the irritation of these organs, blisters seem to promise well. We are fully aware of their utility in other cases of preternatural secretion, as well as of incontinency of urine, and there seems to be no good reason why they should not prove serviceable in diabetes.

It has become a practice of late, perhaps, more in this city than elsewhere, to treat some of the cases of hemorrhage by the vesicating applications. After arterial action is reduced by venesection, they are unquestionably serviceable in hæmoptysis, and worn on the back of the neck, I have seen them suppress, in several instances, very troublesome bleedings from the nose. As respects uterine hemorrhages, I am not able to say much, though

in that irregular species of menorrhagia, which occurs about the period of the cessation of the menses, I have known some good result from blisters habitually kept on the ankles.

Many of the exanthematous affections, in certain shapes, at least, demand the use of blisters. To sustain the system in typhoid, or confluent small pox, they have been found advantageous, and also in the same complaint, where the eruption suddenly recedes. Exactly with the same view, are they directed in measles, under similar circumstances, and moreover to relieve the violent catarrhal affection which often attends this disease.

The utility of blisters in arresting the malignant forms of erysipelas is established by the amplest experience. To the late Dr. Pfieffer of this city, the credit of this valuable discovery has been generally accorded. But the practice is of an older date, and I think may be found in some of the writings of M'Bride.

With nearly the same advantage, blisters are prescribed in scarlatina, to support the system when approaching the typhoid state, and should the throat be affected, are still more important as a topical application earlier made.

DISCOURSE XXX.

The subject continued.

WE come now to the class of Neuroses, in which I include both the nervous and spasmodic affections. Of these there is a great variety, in all of which blisters are more or less employed.

It has long been customary to vesicate the head in epilepsy, where the disease is supposed to originate from some morbid condition of the brain. Cases of this sort, however, are rarely curable by any course of practice, and blisters consequently of little service. But, epilepsy seems also to depend, in many instances, on a certain mobility of the system, somehow connected with a disordered stomach, and which observes the laws of periodical recurrence. It is in such cases that blisters, worn on the extremities, now and then dis sever the trains of morbid association, and thus suppress the disease. What would be the effect of blistering the spine in epilepsy?

Of the use of blisters in tetanus I have no experience. Nearly half a century ago, however, a case was recorded by a West Indian surgeon* of a cure having been accomplished of this disease, by the application of a strip of blister plaster along the whole extent of the vertebral column, and this prac-

* Mr. Carter.

tice, I have heard, has recently been imitated, and with sufficient success, to claim our attention.

Certain spasmotic affections of the chest are sometimes benefited by the use of blisters, among which may be mentioned pertussis, asthma, and angina pectoris. Perhaps it may be entirely out of place to mention here, that they are prescribed with advantage in some of the spasmotic complaints of the stomach, and particularly in gastralgia and pyrosis.

In several of the cachetic cases, blisters are greatly employed. To repress any inflammatory action of the lungs in pulmonary consumption they admirably co-operate with general and topical bleeding, and should be so repeated as to keep up a discharge from the surface. After, however, the suppurative process has commenced, in any one form of the disease, they not only prove nugatory, but often increase the mischief, by aggravating the degree of irritation. Nevertheless, as expectorants, they are occasionally productive of relief, by invigorating the lungs in the protracted catarrhs of debilitated persons, and, perhaps, too, in some instances of consumption of this species.

Much as blisters have been used in dropsy, I can not help suspecting, that they are an equivocal, if not an hazardous remedy. My allusion is to their use in anasarca and ascites. To evacuate the water in the former case, they are applied to the lower extremities, and though occasionally with success,

they much more frequently fail to do good, and sometimes, as I have myself seen, induce gangrene.

From their application to the abdomen not a great deal can be expected. Yet, I have had one case of ascites, and know of another well authenticated, where the water was completely evacuated, and in a very short time, by this means.

Of the efficacy of blisters in hydrothorax there is not the slightest doubt. The disease in the commencement is generally, I believe, of an inflammatory nature, and demands very active depletion, with the aid of a constant irritation on the surface of the chest. Even in the advanced stages some temporary mitigation of the more distressing symptoms is sometimes derived from the same measures.

To the employment of blisters in erysipelatous inflammation, I have already alluded. Led by analogy, Dr. Physick, some years ago, made a trial of them in gangrene, and the success which he then stated, has been so fully confirmed by the concurrent testimony of a large number of practitioners, as to place this very high among the great practical improvements. It would seem, that they are advantageous in cases of gangrene arising from very opposite causes, and differing essentially in character and circumstances. I have known them to arrest the affection, when resulting from active inflammation, and not less promptly in one case, at least, in an oedematous limb, connected with a very

cachetic and exhausted state of system. Cases, however, of gangrene occur, such as are occasioned by mechanical interruption to the circulation, in which they can be of no service, and these, I suspect, will be found to constitute the only exceptions to the general use of the remedy. As our object is to check the progress of gangrenous action, the blister should be applied so as to embrace the whole of the healthy margin, and is managed afterwards, in the ordinary manner.

In another place* I have noticed the utility of blisters in amenorrhœa. But this is not the only case of suppression, in which they are serviceable. Wherever, indeed, a natural discharge is checked either by torpor of the secretory organ, or restrained by spasm, blisters will generally be found to afford relief, and such is especially true, in regard to retention of urine.

Not a few of the local affections are advantageously managed by blisters. As a discutient application, their power is acknowledged in bubos, in mammary swellings, in enlargements of the testicles, and in scrophulous and other indolent tumors. Of all the means which I have ever tried, they are the most successful in relieving paronychia, if resorted to in the early or forming stage of the case.

Applied behind the ears, they are useful in deafness, whether of an acute or chronic nature, and not less so in the painful affections of the ear, pro-

* Emmenagogues.

ceeding from an inflamed state of the membranous lining. Confessedly one of the most effectual of our remedies in odontalgia, is a blister to the cheek, and I have known it to suspend the pain when put on the arm. Even a sinapism will sometimes be productive of the same effects.

As a remedy in *tænia capitis*, in obdurate tetter, and in many other herpetic cases of a local nature, the use of blisters is familiar to most practitioners.

Much has been said of late years in favour of blisters by Mr. Crowther, and other surgeons, in the acute and chronic inflammations of the joints, and, from what I have seen of the practice, I cannot doubt of its great and decisive utility. To be successful, however, the discharge must be kept up, either by a repetition of the blisters, or by dressings with savin ointment.

Of the numerous improvements in surgery which have been suggested by Dr. Physick, there is scarcely any one of more unequivocal utility, than the management, by blisters, of inflamed veins from the operation of bleeding. In most cases, a single one will prove adequate to the cure, though occasionally, where the arm is very stiff and tumid, a succession of them is demanded. The mode of application is, to confine a strip of the plaster along the whole course of the inflamed vein, making an opening for the pus or sanies to escape.

To the cases which I have enumerated, many more might be added, in which blisters are em-

ployed. Enough, however, has been said to serve as a guide in their application, and to illustrate the great value of them as a means of combating disease.

Next, therefore, I am to give some account of the articles which are used for the purpose of effecting vesication.

MELOE VESICATORIUS,

VEL

LYTTA VESICATORIA.

Of the genus *Cantharis* there are several species, but the one here introduced is most highly esteemed, and has long since supplanted all the rest in practice. As a vesicating substance, the *Mylabrum Cichorei* was employed by the ancient physicians, and, we are told, is continued, for the same purpose, by the Chinese. *Cantharides* are to be met with in Germany, France, Italy, and most of the countries of Europe. Being, however, procured chiefly from Spain, they are called *Spanish flies*, though the largest and best are brought from Italy.

Cantharides are an insect of the beetle kind, having a lively tinge of blue and green, interspersed with a golden hue, appearing at stated seasons in large swarms on trees, the foliage of which they ravage and destroy. Caught, which is done by shaking them off the trees into a cloth held underneath, they are immersed in vinegar, or exposed to

its vapour, and next dried by being placed in the sun.

Cantharides do not lose their virtue by age, or by keeping them in powder. Even these acrid insects are soon reduced, by some others feeding on them, to dust, which, however, is found to be as active as the recent fly, since only the inert parenchymatous portion is selected as food.* †

CANTHARIS VITTATA,

VEL

LYTTA VITTATA.

These are an American insect, having been met with, I believe, in no other section of the world. During the autumnal months they appear, in some seasons, in prodigious numbers, covering the leaves

* Of the manner of preparing a blister plaster little need be said, so familiar to almost every one is the process. Commonly it is done by spreading a piece of soft leather, or new strong linen, of the proper form and dimensions, with *basilicon ointment*, and then working into it as large a portion of the powdered flies as can be conveniently done. But as the flies are apt to fall off, whatever care be taken in forming the plaster, it will always be prudent, and particularly if the blister is to be applied near the eye, to have it made of the *epispastic ointment*, the formula for which may be seen in any of the Dispensatories.

To increase the vesicating power of cantharides, various means have been suggested, the best of which is, undoubtedly, that proposed by Dr. Hartshorne of this city, consisting of a strong decoction, made by boiling the flies with the spirit of turpentine. Dossils of lint soaked in this, and applied to any part of the body, hardly can fail, under any circumstances, to excite a blister.

† Diuretice.

of several different kinds of plants, which they devour, though they are found most abundantly on the potato, and hence are called *potato fly*.

In its general configuration, and appearance, this insect bears some resemblance to cantharides. It is, however, smaller, and of a very different colour, having a mixture of the red, black, and yellow, variously distributed. To Dr. Isaac Chapman of the neighbourhood of this city, the credit is due of the discovery of the vesicating property of this fly. Nearly twenty years ago, he proved, by a series of trials, that, in this respect, it is equal, if not superior to cantharides, and which has since been confirmed, by the experience of many of the most distinguished practitioners in every part of the United States.

Experiments made with both very satisfactorily show, that whether used as an external application, or an internal medicine, they are productive of the same effects, with this difference only, that our native fly is much more prompt as a vesicatory.

Exactly as in the case of cantharides they are killed, by being subjected to the vapour of vinegar, and afterwards carefully dried, so as to resist the process of putrefaction. Neither time nor pulverization impairs, in any great degree, their activity. The fine dust to which they are reduced after a few years, by the ravages of other insects, retains all the powers of the fresh fly.

No reason, in short, exists for the preference still

given to cantharides, except, perhaps, the irregularity with which practitioners are supplied with the American insect.

MELOE NIGER.

Of the medical properties of this insect I have no knowledge myself. It was originally recommended as a vesicatory by the late professor Woodhouse of our University, who considered it as not less efficacious than either of the two preceding flies, and with this superiority, that it never excites strangury. Whether this statement be correct or not, has not been sufficiently determined. The fly does not abound with us, though in the New England states it is said to be met with in very large numbers. It is not more than half the size of the other American insect, is of a dark black colour, and feeds chiefly on the stick weed* and potato vines.

Mineral Vesicatories.

Of these the only one I shall notice is emetic tartar. Confined on a part for a day or two, this salt produces a very peculiar species of vesicular eruption, difficult to heal, and hence, as affording a permanent irritation on the surface, is thought by some practitioners to be singularly useful in protracted catarrhs, consumption, asthma, angina pec-

* *Ambrosia trifida.*

toris, chronic rheumatism, white swellings, and in all such like cases. But my own experience, and that of the physicians of Europe, by some of whom this new vesicatory was much employed, while I was abroad, convince me that it has no superiority over the common blister, and I am still ignorant of the complaint in which it should be preferred. The best mode of making the application is, to dust a piece of adhesive plaster, of the proper size, with the emetic tartar, leaving the margin clean, that it may more firmly adhere.

Vegetable Vesicatories.

In various degrees, many plants are possessed of this property, as the euphorbium, the mezereon, the persicaria, the ranunculus bulbosus, &c. They have, however, given way in practice to the productions of the animal kingdom, of which I have treated. It, nevertheless, appears to me, that the last of the plants mentioned is, in this view, entitled to some further notice.

The ranunculus, better known by the title of *crow-foot*, or *butter-cups*, is every where spread over our meadows and moist fields. As a blistering substance it is the bruised root which is used, and most prompt and powerful does it seem to be in this respect. Except in veterinary practice, I have never seen it resorted to, though it is occasionally done, as I understand, by country people, in

the management of their complaints. Of this there is little doubt, that in the horse it will vesicate more effectually than cantharides.

Considering its great activity, I am inclined to suspect, that we might make some beneficial application of it in our own practice, yet, on this account alone, it should not supersede the animal vesicatories. Like all other agents which act on the living system, epispastics are distinguished by peculiarity of action, and some of them cause impressions infinitely more salutary than others. Though by very many means we can raise a blister, and by some in much less time, than with cantharides, there is no one which precisely imitates their mode of action, or will do equal good in the cure of disease. It is probable that the ranunculus will be found to answer better as a sinapism, to arouse the system in its low or lethargic states, than for the purpose for which it has hitherto been employed.

Setons and Issues.

As sometimes substituted for blisters, I shall here say a few words relative to setons and issues. These operate very much like a permanent vesicatory, each occasioning an external irritation, attended by a purulent discharge, and hence are applicable to nearly the same description of cases, yet they are not equal to a blister, and should never be resorted to, to the exclusion of it, except

from considerations of convenience to the patient. The seton I would reject altogether as more painful and disagreeable than either, and not so effectual.

Most generally, issues are applied in the complaints of the head, and nervous system, such as vertigo, hemicrania, habitual stupor, and in gutta serena, incipient cataract, deafness, as well as in palsy, epilepsy, chorea, and recently in tetanus. It is said, one or two cures of this disease have been made by Dr. Hartshorne of this city, by caustic issues on the back of the neck. To some of the phlegmasiæ, in a chronic state, at least, they are also thought to be well suited, and particularly to pneumonia running into consumption, hepatitis, inflammations of the joints from rheumatism and other causes, and above all in diseased vertebræ.

As in the case of blisters, the rule is, to establish the issue as close as possible to the seat of the disease. But where there seems to be no local affection this is not always necessary, and near the insertion of the deltoid muscle of the left arm may be selected as a proper place.

An issue can be made by incision or by caustic. When the former mode is adopted, a pea, or bean, or some hard substance, must be kept in the wound to promote the discharge, and to prevent cicatrization. But the latter is now preferred, and the approved way of doing it, is previously to blister the part, and then to apply caustic to the raw surface for a few minutes. The best dressing is savin ointment.

Rubefacients.

As the term imports, these are such means as redden or inflame the skin without producing vesications, acting very much on the principle of blisters, though with less power and effect. It would seem to be a law of the animal economy, that superficial inflammation, in most cases, shall relieve that which is deep seated, and it is in this way that rubefacients are probably of service.

To many of the diseases enumerated under the head of blisters, some one of the rubefacients is applicable, and though the whole of these articles agree in their general or leading properties, still to a certain extent they differ, and are not so well suited to the same description of cases. It will therefore, perhaps, be best, on this account, to discuss the practical application of each article separately, and as one of the most important, I shall commence with the

OLEUM TEREBINTHINÆ RECTIFICATUM.

Of this I have already said something when treating of diuretics. As a rubefacient it is much prescribed in rheumatism, in sprains, and swellings of the joints, in the affections of the throat, in pleurodine, and even in some of the deeper seated inflammations. It is commonly used as a liniment, though where a stronger impression is desirable, it is better to apply flannel soaked in it to the

affected part, which excites a sort of vesicular eruption that is more permanent in its effects.*

But though the turpentine is thus irritant to the healthy skin, it constitutes one of the most lenitive and effectual applications to burns. On this point some difference of opinion continues to prevail among practitioners, owing, however, I suspect, to the mode in which the application is made. If by carelessness or otherwise, the turpentine extends to the sound skin, great irritation and pain are always felt, and hence we should never use it except in the form of an unguent spread on linen, and so adjusted, as merely to cover the burn.*

PIX BURGUNDICA.

Burgundy pitch is a resinous concrete, obtained by incisions made in the trunk of the tree, called by botanists *Pinus Abies*. Spread on leather it forms an excellent rubefacient, occasioning a slight irritation, and some exudation, though rarely amounting to a blister. Thus made, a plaster worn on the chest often does good in protracted catarrh, in pertussis, in asthma, and is sometimes not without utility in rheumatic and other painful affections, applied over the seat of the complaint.

* The ointment of Kentish, who first prescribed the article in burns, which consists of turpentine worked up with basilicon ointment, is the very best mode of using it.

CAMPHORA.

Dissolved in rectified spirits of wine, camphor alone, or mixed with olive oil, is a useful rubefacient, and by adding the aqua ammonia, we have a liniment much more actively stimulating, which is applicable to a great variety of cases.*

AMMONIA.

Of the preparations of ammonia, the solution in water† is chiefly employed as a rubefacient. It is exceedingly irritating, and more commonly is prescribed in the shape of what is called volatile liniment, which is made by uniting it with olive oil.

TINCT. CANTHARIDIS.

By itself, or added to some of the preceding liniments, the tincture of Spanish flies forms one of the most active of these preparations, and is thought to be peculiarly well suited to chronic swellings of the joints, from rheumatism, and other causes, as well as to the paralytic affections.

* The celebrated liniment, called *Steer's Ophodeldoc*, consists of white soap, 3vii., rectified spirits, 3ii., camphor, 3ii., liquor ammon. 3iv., oil of rosemary 3ss.

Paris's Pharmacologia.

† Aq. ammonia.

CAPSICUM ANNUUM,
VEL
PIPER INDICUM.

Cayenne pepper mixed with a small portion of any ardent spirits, is, in some cases, the very best of the rubefacients. By steadily irritating the surface with it, I have often witnessed very striking effects in low states of disease, and I know not of any thing which affords more prompt relief in lumbago, sciatica, not to mention other forms of rheumatism, attacking suddenly and without fever. A saturated tincture of capsicum made with alcohol, is a neater preparation, and though less prescribed, I suspect will be found equally powerful.

In various diseases, and more especially those of the alimentary canal and head, attended with cold feet, great benefit has been experienced by constantly wearing socks dusted with Cayenne pepper.

SINAPIS.

As a rubefacient no article is, probably, so much used as mustard. Converted into a paste, by a mixture with vinegar, and applied, spread on linen, to the affected part, it will sometimes speedily relieve rheumatic pains, is also beneficial in the ultimate stages of typhus fever, and to

arouse the system, in the apoplectic and comatose affections. As a preventive of the return of convulsions in adults or children, sinapisms should not be neglected. It is hardly necessary further to remark, that they are one of the remedies in which we mostly confide, to attract and fix gout on the extremities. In all these cases, they are applied to the soles of the feet, or to the ankles, and while they sustain the general excitement, seem to do good, on the principle of revulsion.

Now and then, from excessive action, sinapisms, if permitted to remain on too long, will so completely destroy the vitality of the part, as to occasion gangrene. It is, therefore, prudent, where they give much pain, speedily to remove them, and recur to such means as may abate inflammation. Except in very torpid conditions of the system, half an hour will be a sufficient time for the continuance of the application.

To mitigate the activity of the mustard, it is customary with some practitioners to mix with it an equal portion of flour, and this is proper, in the cases of children, or women with delicacy of skin.

ALLIUM SATIVUM.

Cataplasms of the bruised root of garlic, to the extremities, have been immemorially celebrated, in most of the cases in which mustard is employed.

Being, however, a less active article, it is, for many purposes, certainly not so effectual, though as a poultice in paronychia, and some other deep seated inflammations, it is highly useful.

To the garlic, we might add nearly all the alliaceous and silaquosæ, as having, in some degree, the same properties.

ANTIMONIUM TARTARISATUM.

With this article, I shall conclude my account of the rubefacients. Long ago, the emetic tartar was known to be possessed of the power of irritating the skin, and was used with this view. Twenty grains of it, dissolved in two ounces of water, with one ounce of the tincture of cantharides, form the famous liniment or lotion, of Struve, in hooping cough, and is essentially the same as Roche's *Royal Embrocation*, for this disease. The region of the stomach is directed by Struve, to be well bathed with this every night, and from it, he says, the best effects may be expected.*

Of Caustics, or Escharotics.

Caustics, and escharotics, are such substances as erode or dissolve the animal solids, and between which there is no essential difference, except as regards the degree of power. Two modes have

* Blisters.

been suggested, by which they produce their effects; either by excessive action, destroying the vitality of the part, and thus occasioning a slough, or by chemical agency, “causing the elements of the soft solids to enter into new combinations, whence their cohesion is subverted, and their composition changed.”

Caustics, or cauteries, for they are the same, are divided into *actual* and *potential*, the first, consisting of fire itself, or a heated iron, and the second, are those things, the mode of operation of which has just been mentioned.

In the very infancy of our science, the actual cautery seems to have been resorted to, and its use was for a long time continued, to destroy fungous flesh, to burn out tumours, and to suppress hæmorrhagy from divided vessels. But the introduction of the ligature, and the more general recurrence to the knife, and to escharotics, have nearly banished it from the practice of surgery,* and altogether from that of medicine. I proceed, therefore, to the other division of my subject, or the consideration of particular escharotics.

POTASSA.

The pure vegetable alkali, or potash, the *causticum commune accerrimum*, is the most powerful

* It is still used, I believe, by surgeons in some of the hæmorrhagies of the mouth, where the vessels are so situated as not to be managed by a ligature.

of its class. But by mixing it with lime, its activity is lessened, and then is called, *causticum commune mitius*.

As the applications of this caustic are chiefly surgical, it is not to be expected, that I should enter into any minute details, relative to its use. I shall content myself, on the contrary, with a very few remarks.

On account of its exceedingly diliquescent and penetrating nature, it acts more deeply than any other caustic, so that care should be taken, not to leave it on too great a length of time, and especially if its application be in the vicinity of large blood vessels.

The properties which I have mentioned, render it very effectual in removing the callous edges of old and indolent ulcers, and for this very reason it is not admissible in recent sores, or such as are attended with much inflammation. Its employment is now chiefly restricted, besides the case just mentioned, to the opening of abscesses, the forming of issues, and to some of the affections of the mouth and fauces, having this advantage under such circumstances, that it may be neutralised by touching it with vinegar, and its extension thereby at once arrested.

NITRAS ARGENTI.

Of all the caustics this is most used, and is applicable to the greatest number of purposes. Being possessed of the power of coagulating animal matter, it does not spread to any extent, and is, therefore, extremely convenient where a large eschar is to be avoided. To common ulcers it is admirably adapted, stimulating them to the formation of healthy granulations, and disposing them to cicatrization.

ALUMEN USTUM.

Burnt alum, in domestic practice, is greatly resorted to as an escharotic, and, perhaps, is undervalued by us. In weak and relaxed sores, I have seen it serviceable, and greatly prefer it in the venereal chancre, and other ulcers, so frequently met with on the same parts.

ACIDUM NITRICUM.

No one of the mineral acids is without caustic properties, though the nitric is preferable. The only case in which I have used it, is in the irregular, fungous, scrophulous sores, and here as an escharotic, it is incomparably the best which I have tried. Diluted, it is often directed as a lotion, in

extensive ulcers, occurring in hot weather, breeding worms, which it speedily destroys.

OXIDUM ARSENICI ALBUM.

As an external application, the white oxide of arsenic was, at one time, in high repute in cancerous cases. It was originally an empirical remedy, prepared as a paste, which applied to the ulcer, speedily formed an eschar, on the removal of which, by poultices, the diseased surface was found to be changed. Of late, a different formula has been adopted, consisting of a solution of the arsenic, in the proportion of ten grains to an ounce of water, and with which the sore is delicately touched by means of a pencil.

Cases are recorded of cancers having been essentially improved under this treatment, and indeed, of cures being effected. Yet our confidence in it has certainly abated, and, we are not without evidence of its inducing so much irritation, as to compel an early discontinuance of the remedy. My own experience with respect to it, is exceedingly imperfect.

More than one of the mercurial preparations are escharotic, and not a little employed. The first, which I shall notice is, the

HYDRARGYRUS NITRATUS RUBER.

The red precipitate is a sub-nitrate of quick-

silver, and is directed either in the shape of an unguent, or in powder, sprinkled on the surface of fungous or languid sores, to erode or stimulate, as the case may be.

CALX HYDRARGYRI ALBA.

Contradistinguished from the preceding article, this is called the *white precipitate*, and is an ammoniated sub-muriate of mercury. Mixed with lard, in the proportion of a drachm to an ounce, it forms the unguentum calcis hydrargyri albi of the Dispensatories, which is much esteemed in the herpetic eruptions, and especially in itch. It is unquestionably serviceable in such cases, and is recommended by its neatness. But the formula annexed is very superior to it.*

This unguent has now maintained in this city, the highest reputation, for more than half a century, in all the herpetic eruptions. It was originally contrived by one of our most distinguished practitioners at that time, though it ultimately came to be sold as a nostrum, by an unlettered woman, who studiously concealed its composition, and thereby acquired a good deal of money, and still more fame, by the many cures which she effected with it.

* B. Merc. precip. alb. gr. xv. sal. nit. 3ss. flor. sulph. 3i. Bene terantur, adde axung: porcenæ 3ij. et fiat ung.

MURIAS HYDRARGYRI CORROSIVUS.

Two or three grains of corrosive sublimate dissolved in an ounce of water, make a useful lotion in venereal ulcers, and also in some of the local eruptions.

UNGUENTUM NITRATIS HYDRARGYRI.

Every practitioner is conversant with the virtues of citron ointment. It is habitually prescribed in *tænia capitis*, in *tetters*, and other cases of *herpes*, and forms an excellent dressing in recent sores, disposed to spread by the acridness of their discharges, as well as in old ulcers, requiring to be stimulated, or to have their fungous surfaces repressed.

I have now enumerated all the escharotics which I think worthy of particular notice, though there still remain some which are occasionally resorted to, such as the muriate of antimony, the sulphate and acetate of copper, the powder and ointment of savin, &c. &c. &c. Enough, however, has been said on a subject, which, urged farther, would lead us into details not very important.

DISCOURSE XXXI.

Cf Diffusible Stimulants.

My attention has hitherto been directed chiefly to the investigation of those classes of remedies, which, though locally stimulant, do, in their general effect, reduce excitement, by evacuations, and are, hence, more particularly adapted to diseases of increased action. These having been disposed of, I am next to turn to the consideration of the second division of my subject, or to the history of such remedies as are calculated to meet the very opposite indications.

Let me at this early stage of the enquiry, again repeat, that while I maintain so far the uniformity of the operation of the various agents on the living system, as that they are all incitant or stimulant, I am still not among those, who, deluded by theory, or in the ardour of generalisation, have insisted that they are endowed with the same properties, differing only in degree of force, permanency, and diffusibility. My view of the subject is, indeed, entirely opposite. Consistently with my own conviction, there are no two articles, which

produce precisely the same effects. The impression created, varies both as regards the force and nature of it, and cannot by any variation of the dose of the article, or manner of administration, be assimilated.

Could we, by any process, bring this about, then, truly, might we retrench the *materia medica*, and introduce that kind of simplicity into the practice of our art, which sometimes has been projected, but which sound experience has eternally taught to be vain and illusory.

In relation to general stimulants, there is a distinction too important to be overlooked. As formerly remarked, we have a set distinguished by great diffusibility, and which, nearly as soon as exhibited, occasion universal excitement over the body: and there is a second section, by which tone is imparted, though very slowly, and only by a long continued administration. The diffusible are very transient in their effects, while such as are more gradual in their operation, produce permanent, or enduring impressions, and are called tonics.

In discussing the properties of the first class, it has been usual of late, to arrange the articles under the two heads of narcotics and antispasmodics. But the latter term is an exceedingly vague one, and to which it is not easy to attach any definite idea.

By spasm, we understand, an irregular contraction of the muscular fibre. But this may take

place under the most opposite circumstances, and is susceptible of an infinite variety of modifications.

It occurs in an extreme condition of weakness, as in many of the nervous affections, and is equally incident to an highly excited system, as is illustrated in cholic, and still more strikingly in some of the diseases produced by the active poisons.

Contemplated, therefore, in one view, we should treat, under the head of antispasmodics, of all the stimulating and tonic remedies, and in another, of those that are directly evacuant and depletory. Notwithstanding, it appears we have no description of articles that can be considered as peculiarly antispasmodic, it must still be confessed, that there are certain medicines, which, though closely allied to the narcotics, are marked by some distinct properties. The difference to which I allude, has been explained on the supposition, that, as stimulants, they have less diffusibility, causing thereby greater permanency of impression, and, on this account, constitute an intermediate link between the narcotics and tonics.

As regards the modus operandi of narcotics, no slight difference of opinion has at all times prevailed. Towards the close of the last century especially, the keenest controversy was maintained on the subject, between the disciples of Brown and of Cullen. It is impossible for me to enter into a detail of the facts and reasonings, employed by the conflicting parties, in this memorable

discussion, which was infinitely more characterised by adroitness of argument, than philosophical courtesy. Nor do I deem it necessary. The decision of practitioners is pretty well made up, as to the particular circumstances of disease, in which we are to resort to this assortment of medicines, and such is the species of intelligence which is most, and, perhaps, only desirable in the practice of our profession.

It may still, however, be the wish of some, to be made acquainted with the more prominent points of difference in the sentiments of these two great and distinguished theorists. This may be done in a very few words.

Conformably to the notions of Cullen, a narcotic is a substance, which, in its primary operation, diminishes the actions and powers of the system, without any sensible evacuation, or in other words, is a sedative. Being, however, noxious in their nature, he supposed, that the conservative principle of the constitution makes an effort to correct the impression of these articles, and the stimulant effect ascribed to them is, in reality, occasioned by the action thus induced. But exhibited in too large a dose, the *Vis Medicatrix* is incapable of resistance, and the system becomes depressed, with the vital energies greatly impaired, or as may happen, entirely extinguished. Narcotics, therefore, according to him, are directly sedative, and indirectly stimulant.

The very reverse of this was held by his opponent, who considered these substances as direct stimulants, surpassing all others in energy and diffusibility, and that the debility which ensues from an over dose is of an indirect kind, the consequence of the expenditure of excitability from excessive stimulation.

But let us trace the action of narcotics, and by doing so, perhaps, we may find that the opinions I have mentioned, however they may differ in speculation, are not wholly irreconcileable in a practical view.

Exhibited in a moderate dose, the purer narcotics excite activity both of body and mind. The force, frequency, and fulness of the pulse are increased, muscular action is rendered more vigorous, the temperature of the surface becomes higher, some of the secretions are promoted, and hilarity and animation of spirits are induced and kept up, for a season. But the effects which I have enumerated, as caused by a limited use of these articles, having continued for a short period, are succeeded by very unequivocal signs of diminished action, and subdued sensibility. The pulse becomes slower, and more full than natural, the secretions, except by the skin, are abated, there is less susceptibility to impressions, pain is alleviated, and inordinate motions repressed, muscular power is abridged, and the mind partaking of this general

languor, is dull and inactive. This state either terminates in sleep, or produces a tendency to it.

By a large dose, debility, without any previous excitement, is occasioned, or if there be excitement, it is so transient and evanescent, as not to be perceived, and when the effect goes off, there are tremors, sickness, head-ach, and oppression.

Taken in excess, the system at once sinks under the impression, and the consequences are either wild delirium, or a heavy stupor, deep, difficult, and stertorous respiration, convulsions, apoplexy, or paralysis, and ultimately death.

As stated, such would seem to be the ordinary effects of narcotics, when given in a moderate, a great, or excessive dose, which, however, are not a little diversified by peculiarities of constitution, or the various morbid states of the system, and other circumstances, known to modify the action of all medicines. There is also no inconsiderable diversity of effects arising from peculiarity of power in the different articles appertaining to this very extensive set of substances. Digitalis and opium, ether and tobacco, camphor and nux vomica, not to cite other examples, are all included in this class, though surely the analogy is very remote, both as regards their properties, and practical applications. Being capable, however, or at least, most of them, of producing either a stimulant, or what has been called a seda-

tive effect, by the mode of administration, narcotics may be employed to meet very opposite indications.

To command their stimulant power, they ought to be prescribed in small doses, frequently repeated, and gradually increased, and the excitement which they enkindle is thus sustained. But when the design is to mitigate pain, or to procure sleep, or to relieve irritation, or deaden sensibility, they should be exhibited in a full dose, and at more distant intervals.

That the purer narcotics are endowed with the power which I have assigned to them, is very satisfactorily proved, as we shall hereafter see, by the operation of opium, the article which, as most commonly resorted to, is best understood.

It may be deduced from the preceding account of narcotics, that they constitute a most important class of medicines, and are susceptible of a very diversified application in the practice of physic. But, to render them serviceable, much caution and discrimination are necessary. Be it remembered, that the indications chiefly, which they are capable of fulfilling, are to excite and support the actions of the system, to assuage pain, and allay irritation, to relieve spasmodic affections, to induce sleep, and to check the morbidly increased secretions, and excretions.

We have, however, a large number of articles, that without possessing the narcotic proper-

ty in the slightest degree, are even more unequivocally stimulant, and which we recur to, in very many instances with manifest effect, where excitement is to be raised or sustained. These, of course, I shall treat of, and under the head of incitants.

Nothing, perhaps, in the exercise of our profession is more difficult, than to fix the period, in the progress of a disease, or to ascertain the circumstances, in which it becomes proper to prescribe stimulants. As relates to the use of depleting remedies, it is far more easy to come to a just decision. Not to descend to details which, probably, would not shed any very distinct light, I will merely observe, that in making up our minds on this point, we must be guided by the state of the system.

As in the administration of stimulants, we hope to overcome an existing action, by exciting a new and a stronger one, it is obvious that they can only be resorted to with any hope of advantage, in the feeble shapes of disease, or in more violent forms, reduced by previous evacuations. But, in determining the exact point at which to commence the use of stimulants, we may also be aided by watching their operation. Being ill-timed, they commonly produce pain in the head, or delirious wanderings, or morbid vigilance, or stricture of the breast, restlessness and anxiety, with a hot dry

skin, parched tongue, and a quick, small, and corded pulse.

As it is of great importance that this set of articles should be correctly prescribed, I shall now endeavour to suggest some precise rules, on the subject.

1. It will generally be found best to begin with small doses, though we are to recollect that the action of these medicines by repetition, is more rapidly lessened than any other, so that, in a short time, the doses require to be considerably augmented. Exceptions, however, exist, to the precept which I have inculcated. Cases of typhus fever, and some of the neuroses especially, are marked by such a loss of susceptibility to impression, that we are called upon, even in the early stages of these disorders, to exhibit stimulants freely.

2. It is wrong to combine many of these articles in one prescription, or to use any number of them at the same time. By directing them separately, or nearly so, we economise our resources in protracted diseases, and probably also, make a more distinct and powerful impression. Where it is expedient to deviate from this course, we should be careful to select such articles as are calculated to co-operate to the same end. Much is sometimes gained by harmony in the action of medicines.

3. It is adviseable to change occasionally, the part of the body to which we apply stimulants.

as sensibility will be left in one place to a medicine, when completely exhausted in another. This is a principle of very extensive application in the practice of our profession. The excitability of the stomach being worn out, we should make an application to the bowels, or skin. We have the propriety of this practice exemplified in the use of opium. Numerous are the cases, where, after it cannot be any longer given with advantage by the stomach, it will act very efficaciously, if injected into the rectum.

4. In the administration of stimuli, as indeed of all medicines, but more especially stimuli, we should endeavour to graduate the article to the state of excitability. This is a point of infinitely greater importance than is commonly imagined. Between certain conditions of the system and medicines there would seem to be an affinity or relation, which when consulted, often leads to decisive advantages. It is not always that the most active article produces the greatest effects. Castor oil will sometimes purge, when a drastic cathartic proves wholly inert. In the low states of disease, I have witnessed, in some instances, more effects from wine whey, than strong toddy. This proceeds from the article being in unison with the condition of the system.

DISCOURSE XXXII.

Of the Practical Application of Stimulants.

NEXT I should proceed, according to the course I have hitherto pursued, to make a practical application of stimulants to the cure of diseases. But, I shall in this instance, depart from my general plan, under the conviction, that I can accomplish my views with greater advantage, and at the same time, avoid much repetition.

To arrange the diffusible stimulants I have not been a little embarrassed, differing as they do so essentially, in their properties and uses. But perhaps, practical convenience will be sufficiently attained by bringing them under the three heads, *incitants*, *narcotics*, and *antispasmodics*.

Of Incitants.

As one of the purest specimens of a stimulant, without any narcotic power, I commence with an account of the volatile alkali, or to speak with chemical accuracy, the carbonate of ammonia.

CARBONAS AMMONIÆ.

Of this article, I have before said something, when treating of diaphoretics and expectorants, but its great importance in the practice of medicine,

entitles it to a much fuller notice than it has hitherto received from me.

As relates to its chemical history, I shall only remark, that it is generally the result of animal putrefaction, though it is contained in some few plants, a point long denied, so much so, that the existence of the ingredient was held to constitute a characteristic difference between the animal and vegetable kingdoms.

In every variety of febrile affection, in some one state, our medicine has been employed, though it is in the low, or typhus fevers that it is chiefly prescribed. Notwithstanding most writers seem to confide in its powers in these cases, and even strongly recommend it, the exact circumstances in which we should recur to it, have not been definitely laid down.

It was on a former occasion remarked, that in the early stage even of genuine typhus, there is always some degree of *increased*, if not inflammatory action. During the continuance of this state our medicine is wholly inadmissible, the treatment here consisting of emetics, purgatives, sometimes of bleeding, and subsequently of the milder diaphoretics. But in the more advanced stages of the disease, when the indications of increasing debility come on, the volatile alkali either alone, or in combination with opium and wine, is of all the remedies which I have ever tried, one of the most decidedly useful.

To every other form of continued fever, however inflammatory in the commencement, the volatile alkali is not less suited when the symptoms of a typhoid tendency supervene. Of its use in intermittent fever, I have no experience. In the feebler shapes of the disease, it is sometimes prescribed with the bark, and has been advised by itself, previously to the accession of the paroxysm, which it is alleged to prevent, or if it fails to do so, moderates the force, and shortens the duration of it.

Notwithstanding its stimulant properties, and the inflammatory nature of the cases, the volatile alkali is considered highly useful in some of the phlegmasiae. By the British practitioners, it is much employed, especially in acute rheumatism, and without any or very little previous depletion. This mode of treating the disease will not answer among us. Everywhere in the United States it is, in the first stages, if not a purely inflammatory affection, at least one of violent action, and can only be managed by very active evacuations. Even in chronic rheumatism, I am not aware that I ever did more with it, than by large doses of the volatile tincture of gum guaiacum, into which it enters as a constituent part. What I know indeed of the two medicines, leads me to prefer the latter, as I think, that the ammonia in combination, displays better powers, in these cases than when alone: The

guaiacum, however, proving offensive to the stomach, the alkali alone may be substituted.

Extraordinary as it may appear, our medicine has been much extolled in pneumonia of the different kinds. This will be found to be the case by consulting some of the older writers. Even so late as thirty or forty years ago, it was the established practice in this city, to treat pleurisy, and other acute affections of the chest, by one or two bleedings, and then with the volatile alkali, and seneka snake root, exhibiting these medicines with a view to their expectorant effects. Either the diseases of which I am speaking have undergone a very essential change of character, or this practice must have proved very destructive.

No one at least, at present, would think of exhibiting our medicine in cases so entirely inflammatory. Nevertheless, there are several forms of pneumonia, in which the volatile alkali may be resorted to, at a very early stage of the attack, and with considerable advantage.

In districts subject to intermittent fever, a species of pleurisy often prevails, which seizing on the emaciated frames of the wretched inhabitants of such situations, is comparatively a feeble state of disease. Bleeding here, more than once, cannot be borne, and soon after the volatile alkali, and other stimulants become necessary. The pneumonia of persons advanced in life, or of exceedingly delicate and debilitated constitutions, affords

a second example, where our medicine may be early employed. To deplete to any extent, under such circumstances, would be fatal, and sometimes, even from the commencement, we are compelled to resort to stimulants, among which no one is so proper as the carbonate of ammonia with opium.

But though in the primary stages of genuine pneumonia, I have maintained that the volatile alkali is precluded, still, towards the close of the attack, when, as sometimes happens, there are a hard cough, deficient expectoration, a hot skin, dry tongue, more or less encrusted, a weak tremulous pulse, and occasionally flushes of fever, with a variety of other signs, denoting great prostration of strength, our medicine, in small and repeated doses, will generally be productive of advantage. Not only in this, which not unfrequently is the prelude to consumption, but in some of the subsequent and final stages of this disease, it has likewise been employed, and certainly not without success. Towards the conclusion of the case, it manifestly sustains strength, invigorates the powers of expectoration, relieves difficult breathing, and in this way, where it does not cure, it palliates symptoms, and renders somewhat less painful the ultimate scenes of existence.

To the utility of our medicine in the winter epidemic of our country, and especially when it as-

sumes the pneumonic form*, I have already had occasion to allude.

Besides the several affections already enumerated, the carbonate of ammonia is prescribed in asthma, pertussis, and in the hoarseness and cough, which are the consequence of ill managed measles. Of its power in the two former diseases, I have little or no experience. As an expectorant it might be serviceable, and also, perhaps, by correcting the depraved state of the stomach, which, if it does not produce, certainly in some instances keeps up, and aggravates these affections. Nor is my knowledge extensive as respects the latter case. Now and then, however, I have tried it, and thought, not entirely without effect. It is here much extolled by several respectable writers.

As a remedy in some of the complaints of the alimentary canal, the carbonate of ammonia is much used. It is said to have done good in pyrosis, and which I can readily believe, though I have had no experience with it myself. To relieve this most distressing affection, I have usually directed a very strict adherence to a milk diet exclusively, which I have found generally to succeed.

Extreme debility of the stomach, attended with vomiting, as in drunkards, is often alleviated by our medicine. I have also used it beneficially in cardialgia, and more so, when occurring in pregnant women. It may be given in a pill, or watery so-

* Pneumonia typhodes.

lution, or a few drops of the volatile spirits of ammonia in water, will sometimes do perfectly well. But the neatest, and perhaps the most efficient preparation, is the one annexed.* Of this, a table spoonful or more may be taken, whenever uneasiness is felt. But, used immediately after each meal, it generally prevents the recurrence of the attacks, by neutralizing the acid which is evolved in this depraved condition of the digestive function.

In that gastric affection, familiarly denominated nervous, or sick headach, to which the valetudinary of both sexes are subjected, a dose of the volatile alkali will, in some instances, afford almost instantaneous relief, and if taken regularly for some time, a permanent cure may reasonably be expected.

It is well known, that gout in its more feeble forms is prone to retrocede from the extremities, and either to wander irregularly about the system, or to fasten on the stomach, or some other important internal part. When this takes place, our medicine either alone, or in conjunction with opium, constitutes one of our means of combating the attack. By imparting tone to the stomach, it expels the disease, and fixes it again in its proper situation. Gout, however, will make its approaches to

* B. Aq. ammoniæ, magnes. calc. $\frac{1}{2}$ 3*i.*, aq. cinnam. $\frac{1}{2}$ *ii.*
aq. font. $\frac{1}{2}$ *vi.*

the alimentary canal in the more insidious guise of periodical colicks, or flatulence, cardialgia, and other symptoms of indigestion. These several affections are more certainly relieved by the volatile alkali alone, or with guaiacum, than any other remedy with which I am acquainted.

In dysentery, the carbonate of ammonia has acquired some repute. Exhibited in small and repeated doses, it is said to relieve the griping and tenesmus, to correct the bloody discharges, and by producing a considerable determination to the surface, to accomplish even more. No part of this statement has come under my own observation, though it seems to me, to be not at all improbable or inconsistent with the acknowledged effects of the medicine. My own experience with it is limited to the sinking states of ordinary dysentery, and to the typhoid forms of the disease, and in either case, it is confessedly one of the most important of our remedies.

Diarrhoea, connected with long protracted debility of the bowels, I have more than once removed by combinations of opium, and carbonate of ammonia, and it is still more beneficial, where this state has been brought on by the habits of debauchery and intemperance.

Numerous as are the diseases that enter into the class of neuroses, there is not one probably in which our medicine has not been employed. It

has been tried in epilepsy, chorea, hysteria, apoplexy, palsy, tetanus and hydrophobia, and excepting one form of palsy, and as a palliative in the hysterical paroxysm, I know not that it is of much importance in any of these cases. This, however, is not the language commonly held on this subject. Of late, I find, on the continent of Europe, and especially in France, the carbonate of ammonia is exceedingly commended in apoplexy.

The writers who have made these reports, and they are of no ordinary character, do aver, that recoveries frequently take place by the copious exhibition of the medicine wholly unaided by venesection or other evacuations. Coming with such authority, it is certainly worthy of trial, though I confess I do not repose much confidence in these representations. Considering the properties of the medicine, if it does good in apoplexy, it is probably in cases induced by gastric impressions.

Of palsy there is one variety in which the carbonate of ammonia is unquestionably useful. It is the offspring of rheumatism. Being long affected by this disease, the muscles lose the power of contraction, and the extremities, if they be the seat of the complaint, of motion. Cases of this description, have repeatedly come under my care, which so nearly resembled genuine palsy as not easily to be discriminated, though they may be generally known by more or less of pain or un-

easiness, and particularly during damp and cloudy weather.

As rheumatism, they are to be managed, and in the selection of remedies, I have found the more stimulating diaphoretics to answer best, among which the volatile alkali is not to be overlooked.

Of the utility of our medicine in mania, I have little to say from my own knowledge, though its efficacy is well attested. As a cordial stimulant, it may be serviceable in melancholia, and in the low shapes of the other form of the disease. But I cannot perceive distinctly the indications it is calculated to meet, as mania ordinarily appears. Much more, in my opinion, is it suited to the cases brought on by drunkenness, and, under such circumstances, I have now and then afforded relief by uniting it with musk, when opium and camphor had proved unavailing.

Among other purposes to which the volatile alkali has been applied, is the treatment of cancerous and scrofulous ulcers. It is now about thirty or forty years since Martina, an Italian writer, gave to the world an account of several cases of cancer, which he declared he had cured by the internal and external use of this medicine. Not very long afterwards, Professor Hufeland in part confirmed this statement, by announcing the efficacy of the remedy in scrofulous ulcers approaching the nature of cancer.* These re-

* It was the caustic alkali they both employed.

ports, however, not being corroborated on further trial by other persons, the medicine lost all its reputation, and has sunk, in this respect, nearly into forgetfulness.

The last case in which I shall notice the powers of our medicine, is in the bite of venomous reptiles. Of the extent of its efficacy here it is not easy to determine, as there exists not a little contradiction on the subject. By several writers of the East Indies it is asserted, that it corrects the effects of the poison of the serpents of that country, and the same account is given of it in the West Indies.

We have more than one case of its successful application in the United States, recorded by respectable practitioners,* though its utility is denied by others of not less weight of authority.† It is recommended to be employed, internally in pretty large doses, while the bitten part is at the same time bathed with a solution of the caustic alkali.

As yet no opportunity has occurred to me of testing its powers in such cases, and, I confess, that I have no great confidence in it. The experiments of the Abbe Fontana, show that it is useless in the bite of the viper, and I suspect, that it is equally so, in relation to other serpents. Yet I have employed it advantageously to allay the pain and inflammation from the sting of the bee, the wasp,

* Dr. Ramsay, &c.

† Dr. Barton, &c.

and other insects. The spirits of hartshorn is, with this view, as serviceable as any other preparation of ammonia.

All the leading diseases in which the volatile alkali is prescribed, have now been enumerated. There is, however, a variety of other indications not noticed, which it is capable of fulfilling, that will not fail to occur to one engaged in the practice of physick.

It is certainly a very highly important article of the *materia medica*, and is applicable to a large number of cases. Not long before his death, the late Dr. Kuhn, who was one of the most sagacious and discriminating practitioners of this country, told me with some emphasis of manner, that after an experience of nearly half a century, if he were called upon to say with what single remedy he had done most good, he would without hesitation name the volatile alkali, aided by wine whey. After such praise from such authority, it surely would be superfluous to press this article on medical attention.

In one respect the volatile alkali differs from every article of the class to which it is attached, and it would seem from all other medicines. The peculiarity to which I allude is this, that the excitement it raises approaches more nearly to that of healthy action, and hence it may be recurred to earlier, than stimulants generally, in the inflammatory affections, and with greater safety in mixed

cases so equivocal or obscure, as to render uncertain the propriety of stimulation.

Of the preparations of ammonia, the one commonly employed, as an internal medicine, is the carbonate, or sal: volatile of the shops. It may be given in the shape of a pill or julep, in the dose of five or ten grains, every hour or two, according to circumstances. The best form however is the latter, which may be made agreeably to the annexed prescription.*

As the effects of this medicine are exceedingly evanescent, perhaps more so than any other, except the etherial preparations, I prefer giving it in small doses, at short intervals, to the opposite mode, and I am persuaded, that in consequence I derive advantages from it, which I should not otherwise experience.†

* Rx. Sal. volat. 3ii. gum. arab., sacch. alb. $\frac{1}{2}$ 3i. ol. cinnam. gtt. v. aq. fons. 3 . m. The dose, a table spoonful.

† *Incompatible substances.* All acids, the fixed alkalis, lime, magnesia, alum. sulphate of magnesia, acetate, submuriate, oxy-muriate of mercury, super-acetate of lead, tartarized iron, and the sulphate of iron and zinc.

DISCOURSE XXXIII.

Camphora.

I HAVE taken this article out of its ordinary position in the *materia medica*. My reason for doing so and placing it here, is its close analogy to the preceding one in most of its medicinal qualities and uses.

Camphor, though long considered as a gum, is a peculiar principle of vegetable composition. It is contained in small quantity in the rosemary, the sage, the starwort, the common sassafras of our country, and in a variety of other plants, chiefly of the aromatic kind. But as an article of commerce it is procured exclusively from the *Laurus Camphora*, which grows in the forests of Japan, existing in distinct grains in the wood of the root, of the trunk, and of the branches of this tree. By merely scraping it out it is obtained, and subsequently, is purified in Europe, and at present in this country, by the process of sublimation.

Camphor comes to us in large cakes, colourless and semitransparent, of a feel somewhat unctuous, having an odour highly aromatic, and a taste pungent and moderately bitter.

Doubts were long entertained as to the precise medicinal properties of this substance. By most

writers, at one period, it was considered as a sedative, exceedingly cooling in its effects. But how such a notion could have been adopted by any one who had ever attended to its operation seems to me extraordinary, as few medicines more unequivocally display their stimulant powers. Experiments, very diversified in their character, made on plants, the inferior animals, and on the human system, demonstrate this point uncontestedly.

Exhibited in a *small* dose, it increases excitement, and if pushed to a great extent, induces delirium, vertigo, convulsions, and sometimes death, resembling, in this respect, the articles with which it is usually assorted.

No medicine, perhaps, has been prescribed for a greater variety of purposes than camphor, though of late its employment is much restricted, and I think particularly so in the practice of this city. Yet, it is unquestionably a valuable article, and ought not to be neglected from the caprices of medical fashion.

In every modification of febrile action, when approaching to the typhus state, camphor has been resorted to, and not without success. Combined with opium, it has especially been considered as one of the chief remedies in the low, or what were formerly denominated putrid fevers. By some practitioners, on account of its supposed antiseptic properties, it is even preferred, in these cases, to the volatile alkali. My own experience

does not enable me to decide confidently on the comparative merits of the two articles, under these precise circumstances. No doubt they are both well adapted to meet the indications that arise in any of the feeble forms of fever. But I confess that I lean to the volatile alkali. I have sometimes however in these cases, if protracted, alternated the medicines, so that the system might not lose its susceptibility by too long a use of the same article, and I suspect the rule will be found salutary in practice.

As respects our typhoid epidemic, camphor, in conjunction with ipecacuanha and opium, may be given in the advanced stages, with very conspicuous advantage. It excites perspiration, quiets nervous irritation, removes delirium, and abates the force of the disease. Nay, it seemed sometimes to answer even better than the carbonate of ammonia, though the latter, is an invaluable medicine under such circumstances.

Camphor has been much celebrated in the exanthematous fevers. It is directed for the twofold purpose of promoting the eruption, and to restore it to the surface, when, from any cause, it recedes. It is also exhibited in confluent small pox, to promote the maturation of the pustules, and to change generally the character and condition of the disease. Connected with this subject, there is a fact, which, perhaps, has not attracted sufficient attention.

It is stated by Rosentien as a point perfectly ascertained, that if the skin be smeared over with a camphorated ointment, the small pox will not appear on that part. To preserve the eyes from the eruption, he advises, that a bag filled with camphor be kept before them, and to prevent the variolous sore throat, the free use of a camphorated gargle. These observations, so far as I know, have never been corroborated, though as they come from a respectable source, they should not be disregarded.

Much has been written, at different times, on the efficacy of camphor in puerperal fever, and it is recommended in all the stages of this complaint, with very little discrimination or judgment *. Few diseases, in fact, are less understood, or in which the practice is more empirical. While some writers consider it as strictly an inflammatory affection, and urge the liberal employment of all the means of depletion, there are not wanting others, and of respectability too, who, influenced by a different impression, enjoin a mode of treatment directly the reverse. Nor is there less division of sentiment as to the precise seat of the disease. It has in succession been located in the uterus, in the peritonæum, in the omentum, in the intestines, and in almost every one of the abdominal viscera.

My own views of the case, lead me to the conclusion, that puerperal fever most commonly has its

* I allude here to the French writers more particularly.

origin in inflammation of the uterus itself, produced by tenderness or violence in the delivery, which extends more or less over the abdominal contents, according to the vehemence of the attack, and the predisposition of the different parts to assume a morbid state. No doubt, however, the disease sometimes exists independently of uterine inflammation. It has been remarked, and I believe truly, that it occasionally follows the most easy labours, so as to preclude altogether the idea of any injury, having been suffered by the uterus or its dependencies. Not unfrequently, puerperal fever has prevailed as an epidemic, and according to the best testimony, it consists at such times, in little more than inflammation of the peritonæum.

Why this membrane should be so liable after delivery, to take on this diseased action, is not very evident. May not, however, this predisposition be owing to the relaxation and debility, into which the peritonæum is thrown, in consequence of the previous distension by pregnancy? It, however, appears to me, that so long as the disease is confined to the uterus, or to any of the contents of the abdominal cavity, it exhibits the phenomena of common inflammation, and is managed without great difficulty, by the ordinary remedies in such cases. But if the peritonæum be brought into a participation, then the fever assumes a distinct shape, and betrays all those peculiar signs which denote inflammation of this membrane.

Cases of the latter description are very intractable. It is a very curious fact, as I have elsewhere remarked, that inflammation of the peritonæum is singular in its nature, and always difficult of cure. What this is owing to, has never been satisfactorily explained. My experience has taught me, that in this species of puerperal fever, venesection is of indispensable utility, though only in the early stages of the attack, and that, on the whole, I have derived most advantage from it, aided by prompt and copious purging, the occasional use of an emetic, when clearly indicated, by fomentations, and emollient embrocations to the abdomen, and in the more advanced period of the disease, from the regular exhibition of camphor alone, in large doses, or with opium and emetic tartar, and, finally, by the spirit of turpentine externally applied, and internally given in such quantities, as shall make a decided impression.

At one period, it was customary to employ camphor, even in the purely inflammatory affections, and such was the practice of Hoffman and his contemporaries, who adopted the idea to which I have before alluded, of the medicine being sedative, and highly refrigerating in its effects. Entertaining a contrary opinion relative to its properties, I must, of course, suppose, that the practice in these cases proved as mischievous, as the theory from which it was deduced is erroneous. Nevertheless, after arterial action has been considerably reduced.

camphor combined with opium and ipecacuanha, or what, perhaps, is still preferable, nitre, will now and then, by exciting perspiration, operate beneficially in pneumonia and rheumatism. Equal parts of camphor and nitre form, indeed, a preparation which is exceedingly serviceable in some of the subdued forms of the latter disease.

To all the nervous and spasmodic diseases, perhaps, without an exception, our medicine has been deemed well suited, and to epilepsy particularly. Cullen, who is very parsimonious of his commendation of the articles of the *materia medica*, speaks rather favourably of it in this complaint. But, it is the general opinion of practitioners, that its powers in epilepsy are heightened by uniting with it the preparations of copper or zinc. It is reasonable to suppose, that such a combination would prove more active than the camphor alone, as the articles mentioned are certainly among the most efficacious of the tonic, or stimulant remedies, in this disease.

Nor have we less testimony to the utility of camphor in chorea. It would be easy to collect a number of cases which are recorded as cured by this remedy, though it must be confessed, that its reputation has declined, and at present is so low, that it is little or not at all employed.

Camphor was formerly much relied upon in tetanus. That it occasionally proved serviceable in this disease is abundantly affirmed. But as in chorea, it

ceased to be prescribed, except in combination with opium, till very lately, some of the physicians of the continent of Europe have once more come forward in praise of it.

Of the treatment of hydrophobia by camphor nothing need be said. Like every other means it has failed to cure, or even to mitigate essentially the symptoms of this disease, leaving it among the most conspicuous of the reproaches of our art.

Notwithstanding, therefore, the very high repute in which it is or has been held as a remedy in the neuroses, it appears that its powers are by no means considerable. If I were to determine, from my own experience, I should say, that it is entitled to little or no confidence in any one of the cases of this class which I have enumerated. It is certain that in epilepsy the disease in which it has received most attention, though it may sometimes palliate symptoms, it is utterly inadequate, when given alone, to produce any permanent impression. Yet, in some of the more irregular spasmodic affections, its utility is confessed. Thus, in dysmenorrhœa, as formerly mentioned, dependent on spasm, it undoubtedly is of much service, though the case, in which perhaps it displays its best powers, is, eclampsia, or puerperal convulsions.

It is not my intention to enter either into the history, or the details of the treatment of this terrible affection. I have not seen a great many cases of it, and I am

disposed to believe that it is of comparatively rare occurrence in this city. In the few instances which have come under my care, I used, with much effect, *copious blood letting*. To this remedy I resorted not less from certain indications which seemed most urgently to call for it, than from the success attending it, which I had witnessed, in the European hospitals. To be effectual, it must be freely employed. There is no disease which requires the lancet to be pushed further. As auxiliary to the same design, topical depletion from the head should also be practised, and I can speak with great confidence of the advantage derived from active evacuations of the bowels by cathartics and stimulating enemata.

Camphor, however, has been most strenuously recommended by professor Hamilton, whose experience is exceedingly enlarged on this subject. To the use of opium he is decidedly opposed. I recollect, his forcibly declaring in his lectures, that he never knew a woman to recover to whom it had been given. To a certain extent, this may be true, when the medicine is administered by the mouth. But I am half inclined to suspect, as well from my pathological views of the case, as from the common effects of the remedy, that an anodyne injection might operate beneficially. After all, our hopes should rest chiefly on effecting a delivery of the woman. By this, we get clear of the cause of the disease, which is in-

disputably irritation, proceeding from an irregular action of the uterus.

Camphor has, for a long time, been a very favourite remedy in the various forms of mania, though the cases to which it is more particularly applicable have not been indicated with precision, or the general practice regulated by any nicety of discrimination. Being so powerfully stimulant, we of course would avoid its exhibition in those states of the disease marked by high excitement. After proper reduction, however, I have frequently observed that camphor, either alone or with opium in pretty considerable doses, has a good effect in calming the commotions of the system, and in inducing tranquillity and sleep.

But, there are certain cases in which we may, at once, resort to our medicine without premising any depletion. Not unfrequently we find insanity to be simply a mental affection, in which the animal machine does not apparently participate to any extent. Cases of this sort are usually brought on by the gradual operation of grief or by the sombre contemplations of a false religion. There is here little or no febrile action, and the mind settles down into melancholy, or is ultimately depressed into a state of seeming insensibility.

During the twenty four hours, some exacerbation of the symptoms takes place, and throughout an uncommon degree of morbid vigilance exists. Camphor and opium, with the alternation of the

hot and cold baths, and blisters to the extremities, constitute the best mode of managing these particular cases.

In the treatment of puerperal insanity, I do not know that we are called upon, by any peculiarity in the disease, to deviate very widely from the rules which are applicable to mania generally. Yet it would seem to be more frequently attended with extreme *nervous irritation* than *inflammatory* action. In the former state, I have seen the most manifest advantage from large and repeated doses of the tincture of hop, or the camphorated emulsion, where opium unequivocally aggravated the symptoms. In the latter state, we should bleed and purge so long as there is increased excitement. Blisters to the head, and to the extremities, in either state will be beneficial. They alike allay nervous irritation, or subdue inflammatory action, and thus produce calmness and ease. Applied in the proper condition of the system, or where excitement is sufficiently reduced, blisters sometimes prove to be the best of *our anodynes*.

Nymphomania, which is always, I think, attended with more or less of mental derangement, is said to be successfully treated by camphor. This strange affection proceeds from a morbid sensibility of the uterus and its appendages, and I have observed that our medicine evinces in its operation a strong affinity to this organ, and hence is useful in many of its diseases. But all the cases of nym-

phomania which have come under my notice, were, in the beginning, connected with great fulness of the system, and very high excitement of mind. Camphor, under such circumstances, should be preceded by copious evacuations. This complaint, moreover, is invariably associated, so far as I have seen, with amenorrhœa, and the cures in every instance, were effected by restoring the menstrual discharge.

Without entering into any disquisition relative to the nature of that species of mania excited by intoxication, I shall remark, that the approved plan of managing it, consists in the steady exhibition of the most powerful stimuli. Even though it may seem to be forbid by contra-indications, we ought never to depart from this course. The symptoms of vigorous and inflammatory action incident to the case, are always fallacious, and the system very speedily sinks into a dangerous degree of debility by the slightest depletion.

Of all the remedies which I have ever tried, combinations of camphor and opium are the most successful in this disease, and it is, indeed, not easy to conceive of any mode of practice more efficacious. My rule is to give these medicines in large doses, till the patient becomes composed, and then to sustain his strength by a generous diet, and cordial drinks. The preceding remarks have reference more particularly to the cases occurring in habitual drunk-

ards, and where the constitution is shattered, and broken down.*

Every practitioner is acquainted with the use of camphor in the strangury occasioned by blisters. That it proves serviceable under such circumstances, seems too generally admitted to be doubted. Yet, I am certain that we have better means of affording relief. Besides, it is not to be forgotten that camphor, given freely, is apt to produce this very affection. This was originally pointed out by Dr. Heberden, and I have witnessed it myself in a very aggravated shape, as I before observed.

Camphor may be exhibited internally in different forms. It is sometimes prescribed in substance, in the shape of a pill, which is objectionable from the bulk, and from its being more apt to excite nausea. It may be diffused in water by trituration, with sugar, or mucilage, or almonds. But it is necessary in order to facilitate the process, to add a few drops of the spirit of wine. The camphorated julep of the Dispensatories is a neat preparation, though the annexed formula, is perhaps, to be preferred.†

* Under the head of emetics I have noticed a very different mode of treatment in this case. But though it comes to us as well supported, I have found the above plan so successful, that I have hitherto been unwilling to depart from it in any instance.

† R. Camph. 3i., myrrh, gr. xxx., sacch. alb. 3ij., aq. font. 3iv.

The mixture thus made, is perfectly transparent and very palatable. Of late, however, the solution, or rather suspension of camphor in milk, has nearly superseded all other preparations of the medicine in practice. It is made by simple trituration. Dissolved in seltzer water, I am told, camphor makes a very pleasant and cordial beverage.

The dose of camphor is from five to ten grains, to be repeated once in two, four, or six hours, according to circumstances. In great emergencies, as much as two or three drams, may be given in twenty-four hours.†

† *Incompatible substances.* It is affected by no salt, with which we can combine it.

DISCOURSE XXXIV.

Oleum Terebinthinae Rectificatum.

OF the preparations of turpentine, I have already said not a little.* Distinct, however, from the uses which I have mentioned, it is appropriated to purposes, even still more important, in the management of diseases.

Exhibited internally, the spirit of turpentine is one of the most active and diffusible of stimulants, pervading the whole extent of the system, though directed with greater force to certain parts.

Not long after entering on the practice of my profession, I learnt, that to check the violent vomitings incident to yellow fever, small doses of this medicine had been most beneficially used by Dr. Physick, and other medical men of this city, who borrowed the remedy from him.

Taught in some degree by this fact, the peculiar powers of the article, I very early made a more extensive application of it to cases which I conceived to bear some analogy to the one in which it was originally employed.

* Enemeta, diuretics, emmenagogues, anthelmintics, and rubefacients.

The stomach in yellow fever, at the period the turpentine is prescribed, is in the state of inflammation approaching gangrene, and by the arrestation of which, I presume, it operates so advantageously.

Exactly under similar circumstances of peritoneal inflammation, which partakes much of the nature of gastritis. I have now for a number of years prescribed the medicine, and with unequivocal advantage. Nor do I believe it to be less suited, though my experience in this respect is narrower, to the same state in enteritis, whatever may be the cause, whether induced in the ordinary way, or by acrid poisons, or associated, as it sometimes is, with dysentery.

In the low fevers, when other diffusible stimuli are given, much may be expected from turpentine. It was a common remedy with me in the sinking condition of our winter epidemic, and I had, in some instances, much reason to be satisfied with its effects. More recently I have had occasion to use it, and with equal benefit, in the genuine typhus fever, which for the first time, for many years, broke out in our public institutions, and thence diffused itself, more or less, over the city.

Within the last two or three years, the turpentine has been greatly extolled by a practitioner of Dublin, whose name I do not recollect, in puerperal fever. But, if I am not incorrectly informed, he resorts to it, in the early stages of the complaint,

exhibiting it freely, and at the same time applying cloths soaked in it to the abdomen, so as to induce superficial inflammation.

Of this treatment, my theoretical notions will not allow me to approve, though I am not willing altogether to condemn it untried. The action of turpentine is very peculiar, as is illustrated in scalds, burns, and some other cases, and it is not absolutely absurd to suppose, that it may, in the same way, counteract peritoneal inflammation, which seems to have constituted the cases of puerperal fever in which it was employed.

Nothing is more delusive than the doctrine of the unity of diseased action, and of the identity of medicinal impressions. We cure some inflammations by reduction with the directly depleting measures, while others are overcome by counteraction, at once subverting the morbid movements which are going on at the time, in a part, or the whole of the system. Besides, in the action of turpentine in burns, do we not see this,—in certain collyria in ophthalmia,—in the balsam copaivæ in gonorrhœa,—in the eau medicinale in gout,—in mercury in syphilis, not to adduce other instances from the records of the Brunonian practice, which was often successfully conducted on this principle?

Lately, much has been said in the English periodical journals of the efficacy of turpentine in epilepsy. Cases are recorded by several highly respectable practitioners of cures of the disease by

this remedy. But they are not entitled to the credit of having first used it. Long before I had heard of these publications, it was prescribed by me in the practice of our alms house, and I distinctly recollect, on claiming the remedy, being told by one of my pupils, that it was greatly employed by some one of the physicians of Charleston. Whether it is of much use in epilepsy, my own experience does not enable me to state positively. As yet, I am not sensible that I have done a great deal with it.

More may be expected from it in the spasmodic affections of the alimentary canal, such as flatulent colick, and sometimes it promptly relieves gout in the stomach. A favourite prescription of Dr. Dewees of this city, and with which he says he does great good, in such cases, consists of the oils of mint and turpentine. It is alleged to be particularly suited to periodical colicks.

The dose of the spirit of turpentine, in all the cases which I have enumerated, is about a drachm, to be repeated, more or less frequently, according to the nature of the disease, and the best mode of giving it is alone, or with a small portion of water. By attempting to blend it with mucilage or any such vehicle, it seems in some degree to be volatilized, and is thereby rendered more pungent to the fauces, and difficult to swallow.*

* *Dutch or Haerlem drops*, so much used in the domestic practice of this country, consist of oil of turpentine, guaiacum, spirits of nitric ether, and the oil of amber and cloves.

PHOSPHORUS.

Of the chemical history of this article, I have little to say. Early in the seventeenth century, it was prepared by a German chemist who kept the process a secret, till discovered by the celebrated Boyle. It is considered as an elementary substance, and is commonly procured from bones, though it is also contained in urine. As soon almost as it was known, it came to be used in various diseases, especially in France. But owing to the violence of its action, which could not easily be restrained, and the fatal effects it occasionally produced, it seems to have been universally abandoned as, at least, an unruly and dangerous remedy.

After a considerable lapse of time, it was once more revived, and its use may be traced in England, in pretty nearly the same diseases, in which it had been previously tried on the continent. It there experienced a similar fate, and probably for the same reasons.

As a medicine, we hear nothing more of it, till fifteen or twenty years ago, when the medical journals of almost every country of Europe, by the number of communications they contained relative to it, showed that it commanded great attention. It was extensively employed in the French military hospitals in low fevers, and with a view of checking gangrene from wounds and other causes.

Nearly at the same time, the physicians of different countries seem to have been busily engaged, in experimenting with it in the diseases already mentioned, and also, in the whole of the nervous and spasmodyc affections, to which may be added, gout and rheumatism, dropsy, amenorrhœa, impotency, uterine hæmorrhages, and finally, in correcting the effects of the mineral poisons, as lead, arsenic, &c.

As is usual with regard to all new remedies, much was said of the value of phosphorus in the treatment of the copious catalogue of diseases which I have mentioned. But whatever may have been the degree of its utility, it appears fully balanced, by the hazardous nature of the medicine, and the positive mischief which is acknowledged to have resulted from it. Even in its moderate operation, phosphorus is described, as stimulating the whole system, invigorating the circulation, augmenting animal temperature, promoting the secretions, particularly of the skin and kidneys, imparting force to the muscles, bracing the nerves, inflaming venereal desire, and arousing the mind to animation and hilarity.

Whether this representation be true or not, my own experience is too limited to determine. During my residence at Edinburgh, I made, aided by my friend Dr. De Roche, some experiments with it on rabbits, and we were led to conclude, that the strong excitement evidently produced in these animals, was of a painful nature, and marks of inflam-

mation in the alimentary canal were uniformly found after death.

Contrary to what has been said, we did not perceive that the venereal appetite was at all increased by it, and, indeed, the most sensible effect was a constant and prodigious discharge of urine.

To three different individuals, I have administered phosphorus, and though with circumspection, and in the smallest doses recommended, I was very soon compelled to discontinue it, from the alarming consequences which took place. In each case, the symptoms of gastritis, were induced in a greater or less degree, and in one of them to such an height, as to create much solicitude as to the event.

Nevertheless, I am not quite ready to surrender up an article, which is universally admitted to be possessed of powers of unrivalled activity, and which, perhaps, by further inquiries, and better management, we may turn to an important account in combatting those intractable maladies, now the opprobria of the profession.

Different forms have been adopted for the administration of phosphorus. It has been made into a pill with conserve of roses, which, however, of all modes, is the most improper, since it exists in substance, and can scarcely fail of doing mischief. To guard against its pernicious effects, it should only be exhibited in solution, and so mixed with mucilage, as to obtund its virulent qualities. Conformably to this idea, we have a

formula from the celebrated Hufeland, here annexed.*

Dissolved in oil, as has been done, it is so exceedingly nauseous as hardly to be retained, and I have doubts, from what I have seen, of even the safety of the prescription. It was in this way, that I used it, in one of the cases, to which I have alluded. A better process is to rub it down with sweet almonds, or gum arabic, and then add a portion of the spirits of nitre, or the anodyne mineral liquor, which is said to disguise its taste and odour, making the whole into an emulsion. Many practitioners, however, prefer a saturated solution of phosphorus in sulphuric ether, which contains about eight grains to the ounce, and it seems on the whole as little objectionable as any other mode.† But it has also been proposed, to “ melt it in hot water, to reduce it to a powder by constantly shaking it, till its solidity be restored, and to triturate this powder after divesting it of humidity, with oil and sugar, or the yolk of an egg.”

* R. Phos. urinæ, gr. ij., subigantur longa trituratione cum mucilagine, gum : Arabici, q. s. ut fiat cum aqua fontan. unc : vi. emulsio, cui adde syrupe de althæa unc. i., liquor, anodyn. miner. Hoffm. gtt. xxx., D. S. omni bihorio cochlear sumendum aut plus pro re nata.

† This has been used with advantage externally, in palsy and rheumatism.

But, whatever mode is selected, the fourth of a grain is the largest dose to be given at a time, and the whole amount should not exceed two grains in the twenty-four hours. Even in this cautious and limited dose, we have cases recorded of its having occasioned death, after an inexpressible degree of suffering, from inflammation and spasms of the stomach, &c.

CAPSICUM ANNUUM,

VEL

PIPER INDICUM.

This species of pepper is native of the East and West Indies, cultivated, however, in our own country, and I have seen specimens of such, not inferior to the imported.

Of all the spices it is the most active, emitting, when fresh, a pungent odour, and to the taste is not less acrid.

As a condiment, the people of most warm climates are much addicted to its use, and it seems to be a general sentiment, that it does less harm than any other heating article of the same description. My own experience, which, however, is not great with it, leads me to a similar conclusion, and I have even found it salutary, where the appetite and powers of digestion were feeble and defective. Many, indeed, greatly rely on it in dyspepsia, and if the cases are properly selected, there can be no

doubt of its utility. To the disease, as it prevails in drunkards, or is occasioned by atonic gout, it has appeared to me to be the best adapted.

Entertaining the opinion, that it is one of the diffusible stimulants, capsicum has been strongly recommended by some practitioners in the advanced stages of typhus fever, and other low states of disease. But, I am convinced, this is a total misapplication of the article, from an incorrect estimate of its properties, and, under such circumstances, that it can be productive of no sort of advantage.

On the stomach it operates *locally*, and in a large dose powerfully, creating strong sensations of warmth and excitement, which, however, are not much diffused, neither sensibly increasing the force of the circulation, nor promoting the actions generally of the system. The only indication which I have ever seen it capable of fulfilling, in continued fever, is to alleviate gastric distress, and with this single view, it was sometimes beneficially directed in yellow fever.

That it does good alone, or with the ordinary tonics in protracted intermittents, we have sufficient authority. But this does not at all militate against the preceding remarks, since whatever makes a strong impression on the stomach, whether that impression be extended or not, will do the same, and, indeed, such is the mode of operation of all the best remedies in the disease.

It follows, from the view I have presented of its

powers, that little can be expected from capsicum, except in cases where the stomach is principally concerned, and on this account probably, it has been found useful in certain affections of the eyes, in palsy, in epilepsy, and other neuroses of gastric origin.

The best mode of exhibiting capsicum is in pill, and the proper dose is from five to ten grains, to be repeated, as the case may demand. It is also prescribed in the form of tincture, or infusion, or rather decoction, made by pouring boiling water on the powder.*

CARYOPHILLI AROMATICI.

Cloves are said to be the cups of the unopened flowers of a tree, which grows in the Molucca Islands, of the family of myrtles. Like the capsicum, they have an exceedingly pungent odour, though infinitely more aromatic, and are warm and stimulating to the taste, and in their general effects.

Being analogous to the preceding article, they are employed in nearly the same diseases, and with similar views. Combined with the Peruvian bark, I have often prescribed cloves with great advantage in cases of intermittents, connected with a cold

* As a rubefacient, I have treated of this article sufficiently. But it may be proper here to mention, that it is sometimes used to cure tooth-ach, and that a gargle of it has been found of great service in the putrid sore throat.

phlegmatic condition of the system, and delicacy of stomach. A strong tea of them will sometimes promptly relieve flatulent cholic, and the tincture in small and repeated doses is one of the most effectual means to check nausea and vomiting, where so stimulating a remedy can be safely administered.

The powdered cloves quilted in flannel, and wrung out of hot spirits or brandy, applied to the stomach and bowels, I have seen do great good in cholera morbus, and still more in cholera infantum. I have only to add, that the oil of cloves introduced on cotton or lint into the cavity of an aching tooth will, in very many instances, remove the painful affection.

ZINGIBER.

Common ginger is the root of a plant belonging to both the Indies, to China, and other countries. It is cordial and stimulating to the stomach, though even more local in its effects, than either of the kindred substances I have noticed.

As a carminative, it is often serviceable in cholic, and is greatly prescribed in weak and dyspeptic states of the stomach, from atonic gout, more especially. Not many years ago, it attracted great attention in this case, and the evidence of its efficacy was nearly as general and irresistible, as at present, to the colchicum, or eau medicinale. But its reputation was sustained only for a short time,

and we now prescribe it merely as a grateful stimulus, without the least expectation of any specific or extraordinary effects from it. Either as a strong tea, or in powder, or tincture, the ginger may be directed.

To complete the history of the aromatics, all of which are more or less stimulants, I should next treat of cinnamon, nutmeg, mace, alspice, and several others, which belong to this class. But these are rather employed as spices or condiments, than medicines, or, at all events, not having the power, so far as I know, of effecting so much in any case, as the three articles I have noticed, I shall dismiss them without further consideration.

ALCOHOL.

It is not easy to assign this, or the other articles of which it constitutes the active principle, a position altogether satisfactory. The difficulty in the case arises principally, from the striking difference in its effects taken in a small or large quantity, and, besides which, it is marked by some other very peculiar properties.

Moderately used, it is unquestionably among the least equivocal examples of a purely cordial and exhilarating stimulant, but urged to any extent it loses this power, and produces, as certainly, dulness and stupefaction. It may, perhaps, on this account, without much incongruity, be inserted

between the incitants and narcotics, and it is here I shall treat of it.*

Of the chemical history of alcohol, it will be sufficient to say, that by the process of vinous fermentation it is produced, and afterwards separated from the mass in which it is contained, by distillation. The first portion procured, however, is in a diluted state, and forms what are called ardent or spirituous liquors, which being subjected to repeated distillations become pure and concentrated, and then, in the language of the chemists, are denominated spirits of wine, or alcohol.

Excepting as an external application to burns, and certain cutaneous inflammations, or to restrain hæmorrhages, in the two first of which it is excellent, pure alcohol is rarely employed as a remedy, and never perhaps at present internally. Being a solvent of most of the vegetable proximate principles, such as resin, camphor, balsam, essential oil, extract and saccharine matter, as well as of sulphur, phosphorus, the alkalis, and many of the neutral salts, it may be said almost to be consecrated exclusively to pharmaceutical purposes.

As a medicine, it is prescribed in the shape of ardent spirits, which differ only from pure defecat-

* Though undoubtedly allied, in some respects, to the latter class, we are so far from prescribing it with a view to its narcotic effect, that it is even studiously avoided, and so manage it, that simple stimulation alone shall be attained. As an article of the *materia medica*, therefore, whatever may be its mode of operation when differently used, it can hardly be considered in any other light than as an incitant, or stimulant tonic.

ed alcohol diluted, in retaining the flavour of the substance, from which the fermented liquor was prepared.

Of the effects of ardent spirits on the system, no very minute detail can be required, so familiar must they be to the observations of every one. It may be stated generally, that in a limited quantity, they evince, decisively, all the qualities of a potent and diffusible stimulant, both as regards the functions of the body, and operations of the mind. After a while, however, this condition of excitation gradually subsides, and is followed by a correspondent degree of languor or collapse.

By an increased quantity, the exciting effect is more speedily induced, and we have in rapid succession, the phenomena of intoxication, commencing with exhilaration, next delirium, and finally the most beastly stupefaction. But it sometimes happens, where the quantity has been excessive, or the individual is not habituated to the impression, death has suddenly taken place, without any of the appearances of excitement which I have described.

No very great difference is discoverable in the effects of the several species of ardent spirits, though there is a considerable variety as to taste and flavour. It has been said by those who have carefully investigated the subject, that brandy is most cordial and invigorating to the stomach, that rum is most heating and apt to affect the head, and that gin and whiskey are the least permanent in

their operation, owing to the diuretic qualities which they possess.

Of the employment of ardent spirits as a medicine, I shall say nothing. I am still to learn the case of disease in which they should be directed in preference to wine, and no practitioner, in my opinion, is warranted in sanctioning their use, except as a substitute for wine, where it cannot be had.

It is the sacred duty of every one, exercising the profession of medicine, to unite with the moralist and divine, in discouraging the consumption of these baneful articles, and as the first step in the scheme of reformation, to discountenance the popular notion of their remedial efficacy.

Chained by a species of infatuation to the use of these intoxicating beverages, as tightly as Prometheus to his rock, mankind have hitherto seemed equally heedless to the admonitions of the wise, and to the suggestions of their own understandings in this respect. Leaving such as wish precise information, to consult some of the more formal disquisitions on the subject, which trace their pernicious effects as well on the mind as body, I shall merely remark, that so great is the extent of the mischief, in every view, that the emptying of Pandora's box was but the type of what has since happened in the diffusion of rum, brandy, gin, and whiskey, among the human species.

Compared with ardent spirits, the action of

wine is infinitely less injurious in a state of health, and as a remedy in disease, it evinces the same superiority. The effect it produces is slower, and more permanent, combining also qualities, which, while they blunt the ardency of the stimulus, afford no inconsiderable portion of nutriment, by which the system is sustained and invigorated.

Ever since the practice of physick was emancipated from the authority of the Brunonian school, it is a settled principle among physicians, never to prescribe wine in any of the febrile affections, unless there is extreme debility, or an obvious typhoid tendency. It is prudent, even under such circumstances, to commence with the more moderate stimulus of wine whey, which is always the proper adjunct of volatile alkali, and when, in the more advanced stage of the case, we are forced to resort to opium, bark, musk, or the other articles constituting the treatment at this time, to bring into co-operation wine itself.

As the excitability of the system in these cases is nearly expended, a very copious exhibition of wine is generally demanded, in order to attain its beneficial effects. It is sometimes drunk in quantities so large, as to be incredible, were we not acquainted with the fact, which I have mentioned, of the great insusceptibility to its impression. Nevertheless, even here, we are cautiously to regulate its administration by the effects it manifests,

since, urged too far, it might induce indirect debility, and thus cause irreparable mischief.

Wine may always be considered as doing good, when it renders the pulse fuller, slower, and stronger, when it removes or lessens delirium, calms irritation, and composes to sleep. But if, on the contrary, it accelerates the pulse, flushes the countenance, increases the temperature of the skin, excites thirst, aggravates delirium, or restlessness, and thus occasions an exacerbation of the disease, the evidence of its injurious tendency is no less decisive, and we should, at once, withdraw it altogether, or reduce the quantity.

Thus carefully exhibited, wine will be found not the least important of the stimuli, at this precise conjuncture, in these diseases, being readily taken for the most part, even when medicines are rejected, and with unrivalled effect sustains, in many instances, the exhausted powers of life.

To the treatment of some of the cases of neuroses wine has also been applied, and as regards tetanus not always without advantage. Combined with opium, we have perhaps sufficient authority for stating, that it has occasionally cured the disease. But this is another instance, in which the sensibility of the system to remedial impressions is much impaired, and hence, to be effectual, it must be freely given. Perhaps it would be right to urge it even to intoxication, so as to overcome muscular rigidity, and to the adoption of this course

we are in some degree encouraged by the great facility such a condition affords in the reduction of dislocations, and particularly of the jaw, where the difficulty proceeds from the counteraction of the muscles. There is, indeed, no state in which muscular power is more completely enfeebled or relaxed, than when the system is under the full dominion of the inebriating drinks, as is illustrated in the loss of motion, in the giving way of the different sphincters of the body, and what is strikingly applicable to our purpose, in the uniformly *fallen condition of the jaw*.

As a cordial and tonic, wine is often directed in various chronic cases, attended with debility, and also in the convalescence from acute diseases. Yet the utility of the practice is exceedingly equivocal, and unless properly controlled is very apt to be productive of mischief.

As to the habitual use of wine, except under severe restrictions, it is a “custom more honoured in the breach than in the observance.” Carried to excess, it is only less detrimental than ardent spirits, producing nearly the same degree of physical infirmity and moral debasement.

Among the number of wines which exist, there is no little variety as relates to strength, and other qualities. They differ however chiefly, as possessed of astringency, or are sweet or acescent. The best of them for medical purposes is Madeira, or sherry. I mean as stimulants, in low diseases,

and the first should be preferred. Now and then, however, we meet with cases where claret is more agreeable to the sick, and answers well.

As a tonic, and particularly in weakness of the bowels, port wine is usually selected, and probably on just grounds. But in dyspeptic, and other feeble states of the stomach, where wine is at all admissible, I have found the old and dry Lisbon to prove most comfortable, and in a short time, to be liked by the patients themselves.

DISCOURSE XXXV.

Of Narcotics.

OPIUM.

OF all the articles of the *materia medica*, this is, perhaps, the most extensively useful, there being scarcely one morbid affection, or disordered condition of the system, in which, under certain circumstances, it is not exhibited either alone, or in combination.

Opium is the product of the poppy, or as it is called by Linnæus, the *papaver somniferum*. This is a plant which readily accommodates itself to the diversities of soil and climate, and hence is found growing in various situations, in almost every country. It flourishes well in different parts of the United States, and opium of an excellent quality has been made from it in considerable quantities. Most probably, however, the poppy is a native of the south of Asia, and the neighbouring regions.

Much as the subject has excited curiosity, and ample as have been the opportunities of ascertaining the fact, it seems still to be in some degree doubtful, how opium is prepared in the Eastern

countries. By some writers it is said that the whole plant is boiled, and the water afterwards evaporated. But we have reason to believe, that this is not the process by which, at least, the purer sorts are obtained.

Many parts of the plant, the leaves, stalks, and capsules, abound with a milky fluid, when near maturity, which is emitted through the slight incisions made for the purpose.* Thus procured, the fluid, by exposure to the sun for several days, becomes a tenacious mass, which is then enveloped in leaves, and constitutes the opium of the shops.

This is the most satisfactory account I have met with of the preparation of the article, and it is the process which has been adopted in the manufacture of it in the United States.

As respects the operation of opium on the living system, medical sentiment continues to be divided, though the preponderance is decidedly in favour of its stimulant properties, and with this impression it is almost exclusively employed. In my general speculations, relative to narcotics, I had constantly in view the effects of opium, as the purest specimen of this class of medicines, and from what I have there said, may be collected my own notions on this disputed point. Every part of the statement has been amply confirmed by experi-

* The seeds of the poppy have little or none of the narcotic, or other properties of the plant. They are used only as an emulsion, and from their oily nature answer very well.

ments, and will be found, I suspect, conformable to the experience of most practitioners.

Leaving those who wish fuller information to consult the work itself, containing the experiments to which I have alluded, I shall be content with giving the general results.* It appears that “opium applied to the eye, internal membrane of the nose, urethra, or other similar sensible surface, or to any other part of the body, deprived of its cuticle, is first productive of pain, a sense of heat, and of inflammation, and after the cessation of which symptoms, the natural, or morbid sensibility of the part is diminished.”

Exhibited internally, in an adequate dose, opium produces the following changes in the *vital functions*. “The pulsations of the heart and arteries are first rendered quicker, fuller, and stronger, and afterwards slower than at the time of taking it. With the increase of frequency in the pulse, the heat of the body is generally somewhat augmented. The respiration is little affected, except a large dose has been taken, towards the conclusion of the operation of which, it becomes slow, stertorous, and laborious.”

The *natural functions* are thus disturbed. The appetite and digestion, from unusually large, or frequently repeated doses, are generally impaired, and vomiting often induced: the discharges from the in-

* Vid. Crumpe on Opium.

testines are diminished or suppressed, secretion and excretion are impeded in every part of the system except the skin, the discharge from which is evidently augmented, sometimes preceded or attended with a sense of pricking or itching of the skin, terminating, now and then, in a species of miliary eruption."

The animal functions are affected as follows :

"The hilarity of the mind is by degrees augmented, and continues to increase, if the dose be considerable, until the delirium of intoxication is produced, which, as when resulting from spirituous liquors, is attended in different constitutions with different symptoms. It is, however, more generally productive of a pleasant and joyous state of the mind than the contrary, and in many, it occasions an increased disposition to venery. After these effects have continued for some time, they are succeeded by others of a very opposite nature: the mind becomes gradually dull and languid, the body averse to motion, little affected by customary impressions, and inclined to sleep. If the dose has been considerable, all these symptoms continue to increase, and tremors, convulsions, vertigo, stupor, insensibility, and deprivation of muscular action, appear variously complicated, and in various degrees, proportioned to the excess of the dose, and peculiarity of constitution in the sufferer."

Enough is contained in the preceding extracts to satisfy us of the highly stimulating nature of our

medicine, and it would not be difficult to run the parallel to a considerable extent between it and wine. It is, indeed, sufficiently attested, that it is actually used by some of the Oriental nations, for the same purposes that we seek out stimulating potations. By the Turks especially, we are told,* to whom our more generous beverages are prohibited by religious prejudices, opium is solicited to inspire courage, or to invigorate fortitude, to soothe sorrow, or dissipate misfortune, to awaken the fancy to more brilliant exertions, or to create that mild composure and serenity of feeling, which is so desirable after the cares and solicitudes of an active, perplexing, and arduous scene. Like spirituous liquors among other people, it is, in short, “the support of the coward, the solace of the wretched, and the daily source of intoxication to the debauchee.” But though the analogy to a certain extent exists, there is, in several respects, a material difference in the two articles, and by no mode of administration can they be so assimilated, as to answer the same purposes.

To illustrate more distinctly the use of opium, I shall now proceed to apply it in those diseases, in which it has been prescribed with the greatest advantage, commencing with intermitting fevers. This is no new practice. It appears, on the contrary, that it was pursued so early as the time of Galen, and con-

* Vid. the accounts of Russel, Chardin, De Tott, and other travellers.

tinued by the Arabian physicians, some of whom bear testimony to its efficacy. Yet the powers of the medicine in these cases were not well defined, nor fully established, till much more recently.

It is generally recommended, to exhibit opium about an hour before the period of the anticipated paroxysm, and it is affirmed, that it prevents it altogether, or if it should come on, its violence will be mitigated, and its duration abridged. Of the entire correctness of this statement, I entertain no doubt. My constant practice is the same, and in which I repose the utmost confidence. Even more than this may be done with the medicine. Exhibited during the cold stage, it uniformly produces the very best effects. We are indeed told, and by no less authority than Lind, that in the hot stage it is still more advantageous.

As the result of an enlarged experience, he declares, that it speedily brings about a solution of the paroxysm by inducing perspiration, which relieves the distressing affections incident to the case, that it causes a more complete intermission, and more effectually prepares the way for the bark. Cases treated in this manner, he further states, are never followed by visceral obstruction, and the ordinary consequences of it, dropsy, jaundice, &c.

Of the many who have tried this practice, I scarcely know one that has reported in its favour. It is said, as indeed seems probable, to increase the head-ach, to add to the heat and restlessness, and to

prolong and aggravate, in every repeat, the paroxysm.

I do not know a great deal of it myself. Being repugnant to all my theoretical notions, relative to the properties of opium, I entered fully into the prejudices against it, and never submitted it to experiment till lately. I confess that I have been agreeably disappointed, and am now inclined to believe, that it will be found, that though opium is injurious in the hot stage of intermittents, where the system is plethoric and inflammatory, it will prove eminently beneficial under opposite circumstances. To such an inference I have, at least, been led by my own experience, which, however, has not been sufficiently extensive to enable me to pronounce confidently as to its correctness.

In speculating on this subject, it is a fact, which ought to be recollected, that Lind practised almost exclusively in hot climates, among a people of relaxed habits, with little or no phlogistic diathesis, and where, of course, a strong tendency exists at all times, to perspiration. It is hard to discredit the statements of such a writer.

On more than one occasion I have endeavoured to inculcate the opinion, that all continued fevers, not excepting genuine typhus, are in the commencement inflammatory, or have those determinations and congestions which require depletory measures for their removal. To this state of things succeeds, however, more or less of debility and exhaustion,

and to support the system under such circumstances, becomes an indication of the utmost importance, with a view to which a variety of remedies is prescribed. By the common consent of practitioners, the volatile alkali and wine are preferred, the latter particularly, being a stimulant, powerful and diffusible, and at the same time durable and nutritious.

But though, as a general remedy, these may be superior to opium, certain symptoms or conditions of the system do often arise in the course of the disease, in which our medicine is indispensably necessary. What, for instance, so effectually removes low delirium, or calms inquietude and restlessness, or restrains the diarrhoea, so often an attendant on these cases, which, while it rapidly wastes the already too much impaired strength, counteracts the beneficial tendency of all our endeavours?

Next I am to inquire how far opium may be used in the phlegmasiae. It is remarked by a late writer of some distinction, that we should never direct it, where venesection is demanded, the remedies being wholly incompatible. As a general rule this is undoubtedly correct, though it has many exceptions.

No practitioner, at present, thinks of prescribing the medicine in ordinary puerperal pneumonia, without previous evacuations, and these urged, to a pretty liberal extent. But the circumstances, in which

we should resort to it, have been so precisely pointed out by Cullen, that I cannot do better, than cite the passage.

“To me it appears, says he, that in the beginning of the disease, and before bleeding and blistering have produced some remission of the pain and of the difficulty of breathing, opiates have a very bad effect, by their increasing the difficulty of breathing, and other inflammatory symptoms. But in a more advanced state of the disease, when the difficulty of breathing has abated, and when the urgent symptom is a cough, proving the chief cause of the continuance of the pain, and want of sleep, opiates may be employed with great advantage and safety.”

As, however, given alone, opium has a tendency, notwithstanding what is said to the contrary, in some instances, to check the excretory efforts of the bronchiæ, it is advisable so to combine it, as to do away this objection to its use, and for the purpose, we have a great variety of articles, the most approved of which I have elsewhere noticed.*

Excepting catarrh, which, in the early stage, is more effectually arrested by an opiate, than any other treatment, the preceding directions will apply, with nearly equal propriety, to all the acute inflammatory affections of the chest. Novel as the remedy I have suggested in catarrh may seem, it is not without the support of experience. I have

* Expectorants.

tried it an hundred times on myself, and still oftener with my patients, so that I can hardly be deceived.

Taken on going to bed, which it should be, it soon excites an universal and equable glow over the system, attended with little or no perspiration, and I am not aware, that any advantage is gained by uniting with it a diaphoretic. It probably operates here simply as a diffusible stimulant, overcoming, by its superior powers, the feeble action of the incipient stage of the disease. Delayed till the attack is confirmed, opium becomes mischievous, and we can only hope to subdue it, if violent, by calling into requisition the depletory and anti-phlogistic measures.

But though our practice, with respect to opium, in genuine pneumonia, is such as I have described it to be, we may much earlier recur to it in some of the spurious and irregular shapes of the disease. Of peripneumonia notha there are two species, which hitherto have often been confounded in the treatment, the one consisting in an oppressed state of the lungs, from vast accumulations of phlegm, and the other in congestion of blood, constituting an apoplectic state of these organs. The first is the catarrhus suffocatus of old age, and is managed by emetics, blisters, and stimulating expectorant mixtures, into which opium *enters largely*: the second, though occurring mostly in the meridian of life, proceeds from debility of the lungs, and, in

which, after copious depletion both general and topical, opium at a very earlier period is found to be productive of advantage by invigorating these organs, and equalizing the circulation.

Cases however of the latter form of peripneumonia notha are met with where such freedom of depletion cannot be safely adopted. Engorgement of the great viscera, and especially the lungs, takes out of the general circulation so large a portion of blood, and which is confined so closely, that any considerable loss by venesection is very sensibly, and may be even fatally felt. It is prudent under such circumstances, to detract a small portion at a time, keeping the finger on the pulse to determine the effect, and by thus cautiously proceeding we sometimes succeed in coaxing out the half stagnant blood, and in this way re-establish a just equilibrium in the circulation. But, where venesection is altogether inadmissible, we must substitute cupping, blistering, and, with other auxiliaries, the liberal use of opium, which, I have more than once seen, prove of immense service in these cases, at a conjuncture the most critical and alarming.

In typhoid pneumonia, whether original, or induced by improper management of the inflammatory form of the disease, our medicine is indisputably one of the most decisively useful remedies. On this point, no difference of opinion exists, and we may even go so far as to lay it down as a principle, that in all the varieties or stages of pneumonia,

where venesection is forbid, or is an equivocal measure, opium should be employed, uniting with it small portions of ipecacuanha and calomel, or bringing into co-operation the volatile alkali, as the one, or the other, may seem to be preferable.

Of the use of opium in rheumatism little need be said. It is sufficiently known that this disease is divided, very properly, into acute and chronic, and the former stage being highly inflammatory, our medicine of course is wholly inadmissible. The plan of cure in these cases which, at present, is most followed, is to push the depleting remedies, such as bleeding both general and topical, purging and blistering till arterial action is considerably abated. But if, after this is done, the pains continue, attended with moderate fever, which very commonly happens, we are to endeavour to excite a profuse perspiration, which to be effectual must be kept up, without remission, for twelve, and in some obstinate cases, for twenty-four hours. To meet this indication, nothing has ever succeeded so well with me as the Dover's powder. The mode of exhibiting it here, and indeed under all other circumstances, where we wish the full exertion of its powers, has been amply explained.*

It is worthy of remark, that opium rarely fails to aggravate all the symptoms of acute un subdued rheumatism. Even in the shape of Dover's powder, and where it produces perspiration too, it

* Diaphoretics.

most generally increases the pain, and adds to the heat and restlessness. This fact is particularly entitled to attention, as patients in the anguish of this disease very often demand, in a clamorous manner, a dose of the medicine.

But though, while rheumatism is inflammatory, our practice with regard to opium should be regulated by the preceding cautions, there are cases of it, in which it may be employed in a much earlier stage. The form of the disease to which I refer often succeeds the genuine acute rheumatism, after a few days continuance, though it is more commonly met with in women, or other persons of weak and irritable habits. Either alone, or in conjunction with calomel and ipecacuanha, as has been recommended by some writers, opium is here unequivocally serviceable.

As respects the utility of opium in gout, the opinion of medical men is not unanimous. Yet in the regular attacks of the disease, in the extremities, it seems now to be sufficiently ascertained, that the medicine, so far from affording relief, has a tendency to aggravate the paroxysm. But a practice, very different, was recommended by the celebrated Brown, and has been pursued by his disciples. Believing the disease to arise in all its varieties from debility, it was maintained that it should be treated with stimulants, and among these, that none was more efficacious than opium. Need

I say, that this was mere theory, which has been fully contradicted by experience.

It was indeed the fate of Brown, to illustrate, in his own instance, the pernicious nature of his practice. To a large dose of opium, which he took in a paroxysm of podagra, that brought on apoplexy, it is said, that his death was owing.

Nevertheless, in that species of the disease called retrocedent, and especially when it attacks the stomach with spasms, no doubt is entertained as to the propriety of opiates. But such is the degree of torpor, under such circumstances, that it is often necessary to prescribe the medicine in very large doses. Not less than fifty, or an hundred drops of laudanum, and this quantity to be repeated at short intervals, will be found to answer the purpose in many instances. The effect, however, may be very much promoted by exhibiting, at the same time, some other stimulants, such as volatile alkali, or ether, accompanied by the free use of strong ginger tea, or spiced wine, or hot toddy.

To mitigate pain, as well as to overcome spasm, opium is one of our chief means in nephritis calculosa, and from it the best effects are sometimes experienced. Aided by venesection and the warm bath, it will hardly ever fail to induce such a degree of relaxation of the ureters, as to remove the obstruction, and thereby afford relief. Taken by the mouth, it answers very well, though such is the irritability of the stomach commonly attendant

on these cases, that it is not always retained, and we are compelled to resort to an anodyne enema, which is probably even more effectual. Exactly with the same view, and with equal success, opium is prescribed in the spasmodic or other obstructed states of the ducts of the liver, from biliary calculi, incident to jaundice and other hepatic affections. Nor is it less serviceable in suppressions of urine, from similar causes affecting the bladder or urethra, though a combination of opium and calomel, originally recommended by Hamilton of Lyne Regis, has been preferred under these circumstances, and perhaps would be found a good prescription in all the above cases.

In more than one of the exanthemata, our medicine is occasionally prescribed, but it must be well timed, or it will do harm. Whatever may be the degree of irritation, or restlessness, it is to be withheld so long as there is much febrile action, and relief must be sought by a strict pursuance of the whole antiphlogistic course, including active evacuations. To this general rule, I do not at present recollect a single exception, and it is pointedly applicable to small pox, measles, erysipelas, and scarlet fever, the two last of which may, as affections of the skin, with propriety be placed in this order of diseases.

After, however, a sufficient reduction of the system, or where there is a typhoid disposition, either original, or acquired in the progress of the case,

opiates form a very leading part of the treatment, and conduce to the comfort of the patient, though they may not render more essential service. But, besides the general indication, which they are calculated to meet in the whole of these cases, there are certain peculiar symptoms or affections, for which they are exhibited. Thus, in the fever which precedes the eruption of small pox, convulsions, especially in children, are apt to occur, and though when slight are not to be regarded, and, indeed, are even deemed favourable, still, if violent, or the recurrence is at short intervals, they are alarming, and should be quieted, for which purpose, the warm bath, sinapisms, and an anodyne enema, are the proper measures.

Of the particular circumstances in measles, which exact the use of opium, the cough and diarrhoea are the most prominent. But so inflammatory is the common character of this disease, at least, as it prevails in the United States, that we are not too early to appeal to the medicine. Direct depletion is often required to subdue the pectoral affection especially, and, in which intention we are not a little assisted by the spontaneous discharges from the bowels. These, therefore, being prematurely checked, the cough and dyspnoea will be found to return, or are aggravated. But a real necessity existing for the suppression of the diarrhoea, opiates,

as an ingredient in the cretaceous julep, must be employed.

Except as a lotion, to allay the heat and irritation of the surface in erysipelas, and here a watery solution of opium is very successful, I know not of any particular affection in this disease, or scarlatina, which calls for the use of our medicine.

DISCOURSE XXXVI.

The subject continued.

In most of the hæmorrhages opium has been not a little employed, and I suspect rather indiscriminately. Every sound practitioner will be convinced that in the very active species, and with febrile heat, and excitement, it must be hurtful. Yet the force of the circulation being diminished, or in a case originally connected with feebleness of arterial action, opium is highly useful. It allays irritation, removes spasmodic stricture, and subdues that mobility connected with the state of the system, which is productive, or at least is commonly associated with *passive* hæmorrhages, or in other words, hæmorrhages of weak action.

Notwithstanding the preceding remarks, I am not quite sure, that in pulmonary hæmorrhages, at least, we have not been too much restrained by our speculative notions in the use of opium. What would be the effects of a large dose of it in the beginning of active hæmoptysis, I cannot determine positively, from my own experience. That, however, it has done good when thus prescribed, we are not without some direct proof.

But it may be asked, is not opium a stimulant, and can it be proper to give it where there is an active and disturbed circulation? To this, it might be replied, does not every surgeon after an operation, to quiet the patient and prevent hæmorrhage, resort to an anodyne, though an high degree of vascular action may exist at the time? The fact is, that in speculating on the powers of opium, we should constantly bear in mind that they are very peculiar, and general reasonings will not apply to it.

Most unquestionably it is a stimulant. To this point the evidence is irrefragable. But this is so tempered by the property of assuaging pain, and doing away irritation, that in many instances its effects are different, and hence it may be safely and efficaciously employed, where, proceeding on common principles, it would be prohibited. Yet, I am not prepared to vindicate the propriety of the practice which I have just stated. My knowledge of opium in the case is infinitely too narrow to allow me to do it. Whenever I have prescribed it in the early stage of hæmoptysis, great irritation of the lungs existed, attended by spasmodic cough, &c. No one, I suspect, will dispute its utility under such circumstances, and on this footing I am content for the present, to let it stand.

Of the efficacy of opium in the profluvia, I have already said so much, that little remains for me to add. In treating of diaphoretics, I noticed

its great utility in the bowel affections, and especially in dysentery, cholera, and diarrhoea. Without entering into a recapitulation of my preceding observations, I must again insist on the absolute necessity of our medicine in each of these cases. It is the more important that I should do so, as regards the two former diseases, since the propriety of the practice has been controverted by some of the highest authorities of our science. Even by Cullen, the use of opium in dysentery is condemned, and he is not alone in this respect, though surely he is wrong, or there is a strange delusion on this subject. Consulting my own experience, I must say, that in dysentery opium cannot be dispensed with. Deprived of its aid, I should really not know how to proceed in the treatment of the disease. Distinct from its diaphoretic property, our medicine is often required in the management of the disease, to relieve certain symptoms arising from excessive irritability of the intestines, as tormena and tenesmus, than which nothing is sometimes much more painful and distressing.

Exactly in the case of dysentery,* cholera morbus usually proceeds from original irritation in the alimentary canal extending itself to the biliary organs. This will appear by adverting to the ordinary causes of the disease, which may be

* Vid. Diaphoretics

traced to constriction of the surface from cold, or to a morbid impression made directly on the stomach or bowels by some offensive article, or to intemperance or debauchery. It would hence follow, admitting the truth of this statement, that the only indication, to be consulted, is the removal of the primary irritation, and which might be most effectually accomplished by the liberal exhibition of opium. But it happens, that a theory may be perfectly just, and still our practice cannot be a regular deduction from it. In some of the cases of cholera so copious are the secretions of bile, or such the vitiated contents of the primæ viæ from other causes, that the exhibition of opium must be anticipated by evacuations. These however having been done, our medicine may be then resorted to with great advantage.

Nevertheless, cholera does sometimes occur where the treatment may be reversed, or the opiate be made to precede the evacuations. Every practitioner has seen the disease put on a shape in which an anodyne, given at the commencement of the attack, will speedily check the vomiting and purging, and subdue the attending spasms.

As relates to diarrhoea, the utility of opium is so notorious that it would be a waste of time to dwell on the subject. It may, perhaps, be sufficient for me merely to remark, that our medicine in these cases is sometimes prescribed alone, though

more frequently with the cretaceous or astringent articles, of which I am hereafter to deliver the history.

Directly the reverse of the preceding cases is that condition of the stomach or bowels denominated cholic, the natural discharges being here interrupted by spasmodic constriction. Yet, as affections of the same parts, I may perhaps introduce them in this place, without any great incongruity in nosological arrangement.

Not a little was formerly said of the powers of our medicine in *colica pictoum*. By Huxham, De Haen, and Stoll, it is strongly recommended, and especially when united to some active purgative. To be serviceable, however, the dose is required to be large, and repeated at no very distant intervals.

It has not been my lot to have had many cases of the disease, though the few which have come under my care were successfully managed by opium and calomel, exhibited for the twofold purpose of overcoming spasm and evacuating the bowels.

On the same principle have I prescribed this combination in bilious cholic. Nothing can be more obstinate than the constipation in some of these cases. By the violent vomitings which also attend, it is difficult to get any of the purgatives to be retained. The opium here seems, therefore, a very proper addition, and I have sometimes seen

striking effects from it, by quieting the irritation of the stomach, and removing spasm, allowing thereby the calomel to operate actively. In common flatulent cholic, every one is acquainted with the utility of opium, and particularly when united with any of the carminatives.

Certain affections connected with dyspepsia require the use of opium. The stomach in this disease, owing to extreme debility, is, in some instances, very liable to cramps of an exceedingly painful and alarming nature, which are more readily overcome by this than any other medicine. It is also given in pyrosis, and even Cullen reports favourably of it in this case. I have tried it repeatedly, and without any permanent advantage, however, it may relieve the uneasiness of the moment. The water-brash is an extraordinary affection. To some sections of the world it is endemic, extending in a greater or less degree to the whole population. This is the case as regards Iceland, Norway, Sweden, and the neighbouring countries. It prevails, I know, throughout the highlands of Scotland, and our western States, I have heard, are not exempt from it.

By Linnæus it is said to be produced in the north of Europe, by the excessive consumption of smoked meats, and is cured by a change of diet, which is probable enough. Commonly it may be traced to a connection with a meagre and penurious mode of living, though such is not always the fact. I have very oft-

en met with it, on the contrary, among the wealthy and luxurious. It depends on a vitiated action of the stomach, and may proceed from a variety of causes.

Notwithstanding the general confidence once reposed in our medicine in all the neuroses, I do not know that it is of much service in any of these cases. Certainly, its powers have been exceedingly over-rated. In tetanus from wounds, though still a favourite remedy, I canot, from what I have seen, estimate it very highly, and such, I suspect, is the opinion generally of the practitioners of this country. Yet it should be recollected, that the few instances of tetanus, which are reported to have been cured by opium, were by very unusually large doses. In one case especially, fifteen hundred grains of the medicine were taken in seventeen days, and in another, the still more prodigious quantity of twenty ounces of laudanum, in twenty-four hours. These facts ought to encourage us to persevere in the use of opium in the disease, and to a much greater extent, than we have hitherto commonly ventured to do. Enormous as are the doses mentioned, they are by no means incredible to those who have attended to the extreme torpor and insensibility of the system to the impression of medicine sometimes in this affection.

Of the use of opium in hydrophobia I have little to say. On a former occasion I stated as my conviction, that this disease is incurable by any one of

the remedies or modes of practice heretofore employed, and which was a deliberate, and well weighed opinion, the result of much reading and research. As far as I know, there is not a solitary cure of genuine hydrophobia on record, which is so well authenticated as to be credited, though many instances are to be met with of the imitative affections being relieved by various means. In relation to opium particularly, I have only to remark, that it is alleged sometimes to have mitigated the symptoms, and this is the full amount of its powers in such cases.

Nor highly as opium has been extolled in epilepsy, can I, from my own experience, place the slightest reliance on its powers. As formerly maintained, this disease, together with all the other cases appertaining to the class of neuroses, are most successfully managed by evacuations of the alimentary canal, and by venesection. Depletion of this sort will be found much more readily to subdue nervous mobility, and after this is accomplished, to corroborate the system, the usual tonic and stimulant medicines operate well.

As a remedy in chorea, our medicine has acquired perhaps a less dubious reputation, many practitioners, and among them Sydenham, having borne evidence to its efficacy. Notwithstanding, however, all that can be brought in its favour, I am disposed to think that it generally proves impotent to any permanently beneficial pur-

pose, if it does not do mischief. More than once I have known the disease, treated by opium, rendered worse, and I am not conscious that I ever witnessed the alleviation of any one symptom from its use. Nor can I say more of its powers in hysteria. As a palliative of the paroxysm, it is sometimes advantageously administered, and this is all which can be reasonably expected from the medicine.

In mania of every species opium has been freely used, and I apprehend with very little attention to the peculiarities of the case. Not meaning at present to enter into any disquisition relative to the pathology of the disease, or to the varieties which it assumes, it will be sufficient for my purpose to state, that so long as there is much arterial action, or general excitement, opium is not admissible. As preliminary remedies, venesection, purging, cupping, blistering, nauseating doses of emetics, and cold applications to the head, must be resorted to, and will be found more effectually to induce a state of tranquillity and repose, the only indications which our medicine can be expected to fulfil. But, in the weaker forms of mania, or after the system has been reduced by such evacuations as have been mentioned, opiates may then be administered with decisive advantage.

To this general rule there are two exceptions in the employment of the article. The cases to which I allude are, mania from habitual intoxication, and

that form of the disease, incident to lying-in women.

Of each of these varieties I have had several occasions to say something, and indeed so very recently,* that I feel unwilling to retouch the subject. Content, therefore, with what I have already said, I shall only remark, that the opiate treatment of mania a potu, claimed within the last few years, by several of the European writers, as a great practical improvement, has been known, and generally adopted in this city, as far back as recollection, or traditional reports extend.

More than one of the cases of *cachexiæ* are benefited by the use of opium. To alleviate the cough, or check diarrhoea, it is universally employed in pulmonary consumption. But the powers of the medicine are not limited to these two indications. The inflammatory stage of the case having passed over, I know not, on the contrary, any better mode of treating the disease than by opiates. Even where they produce no permanent advantage, they alleviate the more troublesome symptoms, and afford the only comfort at this distressing conjuncture. But our medicine, I am persuaded, sometimes proves more than a mere palliative in this disease.

All the narcotics are in a greater or less degree useful, in certain ulcerations, and especially of

* Camphor

a scrofulous nature, and opium is among the very best of the class. It is hence conceivable, that in some instances of phthisis, it may promote the healing process, and this it may do as well from the property to which I have alluded, as by allaying cough, and restraining the violent action of the lungs. But, whatever may be thought of its powers in the view which I have presented, no one denies its utility as a remedy in the hectic of consumption. As in the case of intermittent fevers, it is given in anticipation of the paroxysm, which in the same way it puts off, or mitigates. Even this is accomplishing a good deal, though I must repeat, and as the result of a pretty considerable experience, that opium, as a general remedy in consumption, is entitled to much higher confidence than it has generally received.

Of the use of opium in scrofula, it is not necessary for me to say much. The cases in which it becomes proper are obviously such as are marked by great irritability both of the general system and the local affections. But more of this when I come to the history of mercury.

Towards the close of the war of the American revolution, opium attained considerable repute in the practice of the British military hospitals, as a specific against the lues venerea. It was originally introduced into the treatment of the disease by Dr. Michælis, chief physician to the Hessian forces, who gave from thirty to forty grains of it in the

twenty-four hours, a dose so enormously large, that I should never employ it, though we have the assurance of its perfect safety.

On a further trial of the remedy, in the European hospitals, and particularly in those of London and Edinburgh, the statements in its favour were found to be fallacious, and ever since it has ceased to be prescribed as an anti-venereal measure.*

But during a mercurial course, certain states or symptoms often arise, which can alone be managed by opium, such as an extreme irritability of the general system, creating insomnolency and wretchedness, or of the stomach and bowels, preventing the retention of the mercury, or which defeats its action. Nor is it scarcely less useful in the painful phagedenic sores incident to the disease, whether of a primary or secondary nature, as a lotion in the shape of watery solution, while its internal use is continued either alone or with mercury. Of its powers as a palliative in syphilitic rheumatism, and other painful affections arising out of a general contamination of the system, I need hardly insist, so universally are they acknowledged. But, perhaps, it is not so well known, that in the other form of the venereal disease, opium is deserving of some

* "The result of my experiments was very unfavourable to the credit of this new remedy, and I believe, that no surgeon in this country any longer relies on opium as a specific against the venereal virus."—Pearson on the Effects of various articles of the *Materia Medica*, in the cure of *Lues Venerea*.

consideration. It was the practice of the late Dr. Kuhn to treat gonorrhœa exclusively by a grain of opium morning and night, and which he said he was led to adopt, after a trial of all the different modes of managing this troublesome affection, as on the whole, the most successful.

It is generally admitted, that opium rather restrains than promotes the urinary secretion in the healthy condition. But, as happens with other medicines, its effects are different sometimes in disease, and hence, it has occasionally been of service in dropsy. This was the impression of some of the earlier writers, and we are not deficient in evidence of the success of the practice. Facts, to this purport, will be found in the works of Bartholine, Willis, Mead, Monro, Heberden, Home, not to mention inferior names.

As a remedy in dropsy, except to allay irritation, I do not know much of opiates. On a former occasion* I mentioned incidentally, that I had seen more than once very striking effects in the disease from the common sweating mixture, consisting of laudanum, spirits of nitre, and antimonial wine. But, it did good in these instances, by an action on the kidneys, and not at all on the skin. Examples of this reversed operation are by no means uncommon, either in diaphoretics or diuretics : the articles of each of these classes, on the contrary,

* Diaphoretics

whenever disturbed in their ordinary tendencies, are very apt to be diverted into an opposite course.

With this, I complete what I have to say of opium in the cure of diseases. Many other cases in which it is given might have been added, and especially where it is had recourse to, merely to lessen irritation, relieve pain, or induce sleep. But in doing this, I should probably have incurred the charge of prolixity, without affording any very important practical illustrations relative to our medicine. Enough, surely, has been stated to serve as a direction in its further use, and to convince us, that while susceptible of the most diversified applications, it can only prove beneficial when prescribed by an enlightened and discriminating judgment. As it may be regulated, so indeed, will it deserve to be considered, either as the “magnum dei donum,”* or as a weapon of danger and of mischief.

To close my account of opium it remains for me to make a few remarks concerning its pharmaceutical preparations.

As it comes to us, opium is a thick, dark cake, sometimes soft and sticky, though more commonly hard and dry. It is, when fractured, of a brown colour, having a strong foetid odour, and a nauseous, acrid taste.

Notwithstanding the number of analyses, which

* Mead.

has been made of the article, its composition is not accurately ascertained. It is stated to consist principally of gum and resin, in pretty nearly the same proportions. It affords an oily, or volatile principle, and burns in consequence with a bright blue flame. Besides these ingredients, it contains an earthy or saline matter, and a substance perfectly insoluble by the usual menstrua.*

It is easy, from this exposition of its constituent parts, to estimate the effects of the different solvents on opium. By alcohol, or proof spirit, its resin is dissolved, making a tincture, commonly called laudanum, which retains its virtues. The gum is dissolved by water, forming, as it is termed, the aqueous solution, which is much less active, but as some portion of the resin is at the same time taken up, it is not altogether inert. Wines also afford a solution, considered, however, objectionable,

* As long ago as ten or fifteen years, Mons. Derosne of Paris announced the discovery of a certain principle in opium, in which he alleged the whole of its narcotic properties to reside. By the more recent experiments of Mons. Sertuerne, another French chemist, it is ascertained, that this principle consists of an alkaline base, termed morphium, united, however, with the meconic acid, a peculiar one to opium, forming a neutral salt, the meconiat of morphium. This salt is exceedingly active, though the pure morphium is still more so. Exhibited in only half a grain, the latter is represented as producing the effects of the largest dose of opium. The meconic acid is not half so active. This is the amount I believe, of Mons. Sertuerne's paper. But, as I have not it before me, perhaps, in some respects, I may do injustice to his discovery.

as becoming sour by keeping. The solutions by the vegetable acids, have hitherto been represented as comparatively feeble, though I suspect without sufficient foundation.

Of such of these preparations, as are chiefly used, I must say a few words, more in detail. Except, that it is rather slower in its operation, I am not aware of any objection to opium in substance. Certainly it is not so apt to be rejected, where the stomach is irritable, and especially if the pill has been *prepared for some time*. It is said also to answer better in the affections of the alimentary canal, as cholic, diarrhoea, &c. The average dose of opium is about one grain.

Laudanum is a spirituous solution of opium, formerly called Thebaic tincture, from opium having been originally procured from Thebes. The dose is about twenty-five drops, and for a child at the period of birth, half a drop, and is given in all the cases where opium is administered.

Of the Elixir Paregoric, there are two kinds kept in the shops: the one an ammoniated,* and the other a camphorated tincture of opium.† These are of different degrees of strength, the first containing a grain of opium to the drachm, while the second has only this quantity in half an ounce. The camphorated tincture is a much less unpleas-

* *Tinctura opii ammoniata*, *Pharm. Ed.*

† *Tinctura camphoræ composita*, *Pharm. Lond.*

ant remedy, and is usually preferred. It is supposed to be well suited to the catarrhal, and other pectoral affections, occurring in aged people, and the dose is about one drachm, which, however, though it contains little more than six drops of laudanum, is rendered more powerful, I think, by some other ingredients, which enter into its composition.

To the above officinal preparations, may be added another, which, under the demoniation of *Black Drop*, has long been vended as a nostrum in this city, and is now much employed here, and in Europe. Of the formulæ annexed,* the last is commonly adopted, and the tincture thus made, is nearly three times the strength of laudanum. This preparation is one of very great value, and unquestionably deserves a place in the shops. It is distinguished by the property of being well received by the stomach, and while it produces the anodyne

* Take of opium, four ounces,

— Sharp vinegar or lemon juice, four pints. Digest three weeks, and then add saffron, cloves, nutmeg, and cinnamon, of each an ounce, coarsely powdered. Continue the digestion a week longer, strain through flannel, and evaporate the liquor, till reduced to the state of syrup.

2. Take half a pound of opium sliced,

— three pints of good verjuice, one and half ounce of nutmegs, and half an ounce of saffron. Boil them to a proper thickness, and then add half a pound of sugar, and two spoonfuls of yeast. Set the whole in a warm place near the fire for six or eight weeks, then place it in the open air, till it becomes a syrup. Lastly, decant, filter, and bottle it up, adding a little sugar to each bottle.

effect in the fullest extent, is not so apt to leave behind it any distressing consequences, such as sickness, head-ach, nervous tremors, &c.

Most probably this superiority is owing to the acid menstruum employed. It is an interesting fact, and one which lends much support to this conjecture, that laudanum, in a small portion of vinegar, operates much more kindly. This is indeed so true, that I have known several persons, who were utterly precluded from the use of opiates in the ordinary forms, take this acetous mixture with great comfort and advantage.

Cases, however, occur, in which insuperable difficulties exist to the administration of opium by the mouth, and under such circumstances, we resort to the anodyne enemeta, the mode of making which has already been described.* But this is a troublesome process, and which is often pertinaciously resisted, or from irritability of the rectum, or from badness of the machine, or clumsiness of the operator, cannot be accomplished. As a substitute in such instances, I have often directed a suppository of opium, and derived from it, in the fullest degree, the desired effect. To slip a pill of opium into the rectum is so perfectly easy, that it may be done, without the patient even knowing it, and proves so little offensive to the bowels,

* Enemeta.

that no effort is made to expel it, and consequently it is almost always retained.

By some practitioners, no slender confidence is reposed in the application of opium, and particularly laudanum, as an embrocation. But the practice is altogether delusive, and deserves no attention. Let it be managed as it may, opium applied to the surface, in any form, produces no constitutional impression. On this point I do not speak lightly. I have seen, independently of my general experience, a plaster, on which an ounce of soft opium was spread, worn by a child, for many hours, without any perceptible effect on the circulation or other functions. Yet, as a mere local remedy, to assuage pain, I have no doubt of the efficacy of such applications, and there is even reason to suspect, from what has been observed by myself, that opium placed near the nostrils, so that its fumes may be inhaled, will, by its action on the olfactory nerves, affect the system generally.

In dismissing this subject, I shall once more remark, that, using opium by the rectum, it is necessary to treble the dose, and that however administered, the susceptibility to its impression is speedily wasted, so that we are called upon to augment the quantity considerably. The amount of this medicine, which sometimes has been taken, where the habit is confirmed by long continuance, would be incredible, were not the fact attested by indisputable authority. I knew myself, a wine glassful of

laudanum, to be given several times in the twenty-four hours, for many months in succession, to alleviate pain from the passage of biliary calculi, and finally, the patient to recover, without at all suffering from this excessive use of the article. But, what is still more extraordinary, in a case of cancer of the uterus, which was under the care of two highly respectable physicians of this city, Drs. Monges and Le Roche, the quantity was gradually increased to three pints of laudanum, besides a considerable portion of opium, in the same period.

DISCOURSE XXXVII.

The Subject Continued.

LACTUCARIUM.

THIS is the title lately given to a species of opium, or rather, to a substance, having the leading properties of opium, which is procured by inspissating the milky juice of the common garden lettuce.

It has long been suspected, that all the lactescent plants have more or less of the narcotic principle, and as regards lettuce, the point was well ascertained even in the earliest times. Among the fables of antiquity, we read of Venus, after the death of Adonis, throwing herself on a bed of lettuces, to lull her grief, and repress her lewd desires. Allusions to its anodyne qualities, frequently occur in the medical writings of antiquity, and we are expressly told, that Galen in the decline of life, suffering much from a morbid vigilance, had recourse to the eating of lettuce in the evening, which he found "a sovereign remedy."

Most of the older treatises on *Materia Medica* contain similar notices, in relation to the plant, though I cannot discover, that it was subjected to

any pharmaceutical process, or incorporated with the regular remedies.

This was, for the first time, done by Dr. Coxe of this University, who, more than twenty years ago, very elaborately investigated the subject, and showed by a series of experiments, that there is no essential difference between opium and the lactucarium, as regards their medical effects, sensible qualities, or chemical composition.*

Two or three years ago, the same enquiry was prosecuted by Dr. Duncan, sen. of Edinburgh, and without, probably, having any knowledge of what had been previously done, he was conducted to results strikingly similar and confirmatory. As a medicine, he pretends not to any very great experience with the article, though he tells us, that he “has seen manifest good effects from it, in allaying muscular action, alleviating pain, and inducing sleep, the three great qualities of opium.”

But the information afforded us by Dr. Coxe is more exact, who indeed seems to have used, or caused the medicine to be used pretty extensively, and we learn, that in spasms of the alimentary canal, in diarrhoea, in cough, and in some other affections, its operation was precisely the same as opium. It follows, therefore, that, as a cheap substitute for that medicine, it is worthy of attention, and might be manufactured in any part of the United States, without much trouble or expense. Per-

* Vid. Transactions of the Philosophical Society of Philadelphia, for the year 1797.

haps also, it may have some peculiar properties, which might adapt it to cases, where, from certain idiosyncracies, no one of the preparations of opium can be used. The dose, and mode of administration of the two articles, are the same.

TELA ARANEII.

It is an old, and a very general notion, among the vulgar of most countries, that the spider's web, or the spider itself, is possessed of the powers of curing ague and fever, and is actually employed with this view. But, till lately, they have been rejected in regular practice, and their curative effect in disease, if admitted at all, was imputed entirely to the strong sensations excited by so disgusting a remedy.

At his last visit to this city, some years ago, I was informed by Dr. Robert Jackson, of the British army, that having largely experimented with the web, he had much reason to suppose that popular confidence in it was well founded. As a remedy in intermittents, he said, its powers were indisputably ascertained, and that as an anodyne to allay pain, or calm irritation, it proved vastly superior even to opiates.

By one of my pupils,* in whom I could place reliance, the subject was at my request, not long

* Dr. Broughton of South Carolina, who made it the subject of his Inaugural Thesis

afterwards investigated, and by trial, on himself as well as on others, substantially confirmed the preceding statement. But, in a very late work by Dr. Jackson, on fevers, I find a detailed account of his experience with the article, which is so exceedingly interesting that I cannot forbear to extract it.*

* I think I may venture to say that it prevents the recurrence of febrile paroxysms more abruptly, and more effectually than bark or arsenic, or any other remedy employed for that purpose with which I am acquainted : that, like all other remedies of the kind, it is only effectual as applied under a certain condition of habit; but that the condition of susceptibility for cob-web is, at the same time, of more latitude than for any other of the known remedies. The cob-web was rarely given before the subject was prepared by bleeding, emetics, or purgatives ; and, given to a subject so prepared, it seldom failed to effect a cure comparatively permanent ; relapse, or conversion into another form of disease, being upon the whole a rare occurrence where the disease had been suspended by this remedy. If the cob-web was given in the time of perfect intermission, the return of the paroxysm was prevented ; if given under the first symptoms of a commencing paroxysm, the symptoms were suppressed, and the course of the paroxysm was so much interrupted that the disease for the most part lost its characteristic symptoms. If it was not given until the paroxysm was advanced in progress, the symptoms of irritation, viz. tremors, startings, spasms, and delirium—if such existed as forms of febrile action, were usually reduced in violence, sometimes entirely removed. In this case, sleep—calm and refreshing, usually followed the sudden and perfect removal of pain and irritation. Vomiting, spasms, and twisting in the bowels, appearing as modes of febrile irritation, were also usually allayed by it : there was no effect from it where the vomiting or pain was connected with real inflammation or progress to disorganization. In cases of febrile depression, deficient animation and indifference to surrounding objects, the exhibition of eight or ten grains of cob-web was often followed by exhilaration ;—the eye sparkled ; the countenance assumed a temporary animation ; and, though the course of the disease might not be changed or the dangers averted, more respite was obtained from a pill of cob-web than what arises from,

The spider's web has been, for some time past, pretty liberally prescribed by myself, and several of my medical friends, and particularly by Dr. Physick, and Dr. Dewees, and though we attach

or belongs to the action of wine, opium, or any thing else within my knowledge.

Further, the power of cob-web has been tried, and its good effects have been proved in other forms of irritation besides those that are strictly febrile. In spasmodic affections of various kinds, in asthma, in periodic head-aches, in general restlessnesses and muscular irritabilities, its good effects are often signal. The cob-web gives sleep, but not by narcotic power:—tranquillity and sleep here appear to be the simple consequence of release from pain and irritation. Cob-web has also been applied locally,—under my own eye, to ulcerated and irritable surfaces with singular good effect. At first, the pain which it occasioned was sharp,—but it was momentary; and the surfaces, which had been painful, irritable, and untractable to other applications for weeks or months, were healed up in the course of two or three days at farthest:—the experiment was made on superficial sores only.

I have not made a chemical analysis of the substance in question; for my chemical knowledge is not of the kind which would enable me to conduct the operation correctly. The cob-web may perhaps be thought to belong to the class of poisons; but it is somewhat singular that I have not been able to discover much difference of effect from a dose of ten grains and from a dose of twenty. The changes induced on the existing state of the system, as the effect of its operation, characterize it as powerfully stimulant. 1. Where the pulses of the arteries are quick, frequent, irregular, and irritated; they become calm, regular, and slow—almost instantaneously after the cob-web has passed into the stomach: the effect is moreover accompanied, for the most part, with perspiration and perfect relaxation of the surface. 2. Where the pulses are slow, regular, and nearly natural; they usually become frequent, small, irregular,—sometimes intermitting. 3. Where languor and depression characterize the disease; sensations of warmth and comfort are diffused about the stomach, and increased animation is conspicuous in the appearance of the eye and countenance. 4. The cob-web applied to a bleeding surface, occasions a very sharp and transient pain:—the bleed-

different degrees of value to the article, are all satisfied, that the representation of its virtues, to which I have referred, is very little, if at all exaggerated.

In doses of five grains, repeated every fourth or fifth hour, I have cured some very obstinate intermittents, suspended the paroxysms of hectic, overcome morbid vigilance, from excessive nervous mobility, and quieted irritation of the system from various causes. Among those who have used it much, I find a contrariety of opinion, as respects its mode of operation: some considering it as highly stimulant, invigorating the force of the pulse, increasing the temperature of the surface, and heightening excitement generally: while others, witnessing no such effects, are disposed to assort it with those remedies, which seem to do good, by merely soothing the agitations of the system, and I confess, that I concur in the latter view of its properties. Whether there is much difference in the web of the various species of spider, I am not prepared to say from my own observations. That hitherto used in this city, has been collected in cellars, and is probably the product of the common black spider, which is to be generally met with in such damp places.

I have ascribed the credit of this remedy to

ing instantly ceases.—The cob-web here recommended is the produce of the black spider which inhabits cellars, barns and stables: that which is found upon hedges in autumn does not possess the same power, if it be actually of the same nature.

Dr. Jackson, but he has only revived it, as appears from the ensuing extract.*

HYOSCYAMUS NIGER.

THE black henbane is native of several of the countries of Europe, and succeeds very well among us. Of all the articles of the *materia medica*, it is said most to resemble opium, at least, as regards its narcotic qualities. Every part of the plant is possessed of activity, and the root not less than the leaves.

Moderately exhibited, it invigorates the pulse, and occasions some augmentation of temperature, which are followed by diminished sensibility, and sometimes by a general composure of the system, to sleep. In a larger dose, it oc-

* "Araneus, Offic. The spider. Both the spider and its web are used. The spider is said to avert the paroxysms of fevers, if it be applied to the pulse of the wrist, or the temples; but is particularly recommended against a quartan, being enclosed in the shell of a hazle nut. The web astringes and conglutinates, and is therefore vulnerary, restrains bleeding, and prevents an inflammation. The country people have a tradition, that a small quantity of spider's web, given about an hour before the fit of an ague, and repeated immediately before it, is effectual in curing that troublesome, and sometimes obstinate distemper. This remedy is not confined to our own country; for I am well informed, that the Indians about North Carolina have great dependence on this remedy for agues, to which they are much subject; and I am acquainted with a gentleman long resident in those parts, who assures me he was himself cured by it of that distemper. And indeed experience confirms the efficacy of this medicine in the cure of agues" *James's Dispensatory*.

casions thirst, sickness, stupor, and dimness of vision, and in excess, excites delirium, or convulsions, which are accompanied with a remarkable dilatation of pupil, distortion of countenance, a weak, tremulous pulse, cold sweats, terminating in death.

Being so analogous to opium in its leading effects, our medicine has been resorted to, in a variety of cases, as a substitute for that article. It is supposed to have in a considerable degree, the narcotic power, without creating constipation of the bowels. I have often used it with this view, though I confess that my hopes have not been realized. It undoubtedly will ease pain, or soothe irritation, and in this way sometimes disposes to rest. As an anodyne, however, it has been much extolled in mania, and is also prescribed in a variety of nervous and spasmodic affections, as epilepsy, chorea, asthma, pertussis, palpitations of the heart, &c. It is well known as a remedy in scirrhus and cancer, and in scrofulous and other indolent, or painful ulcerations, which it confessedly improves. To meet these last indications, it is exhibited largely, while the diseased parts are washed with a decoction of it. The dose of the extract or of the powdered leaves, the only preparations commonly used, is two or three grains, to be increased very considerably, where it is continued for any length of time. There is also I believe a tincture to be met

with in the shops, the dose of which is thirty or forty drops.

CONIUM MACULATUM.

The cicuta is indigenous to Europe, growing, however, in many parts of the United States, and can now be procured in great abundance, and of an excellent quality, in the neighbourhood of this city. No part of the plant is entirely destitute of strength, though the leaves are possessed of most activity.

Cicuta was perfectly well known in the earliest times. The Greeks used it to inflict the punishment of death, and among the victims of its poisonous agency, was one of the most celebrated of the philosophers of antiquity. Nothing however seems to have been ascertained respecting its medicinal virtues till near the middle of the last century, when baron Størk commenced his experiments with this, and many other of the narcotic plants. In a work which he soon after gave to the public on this subject, he proclaimed its efficacy in scirrhus, and in cancerous sores. The weight of his authority speedily attracted a good deal of attention to the remedy, and cases in attestation of its powers were published by many of the distinguished practitioners in every section of Europe. So confidently were these annunciations made,

that the medical world appeared to be persuaded that what had so long been desiderated a remedy for these dreadful affections, was at length obtained. But a more candid estimate of its powers, has led to the conclusion, that while it is totally incompetent to a radical cure of genuine cancer, its utility as a palliative is undeniable. More than one opportunity I have had of observing the beneficial effects of our medicine under these circumstances. *Cicuta* should here and in all similar cases, be given in very large doses, and at the same time the ulcers be repeatedly washed with a decoction, or covered with a poultice made of the leaves. Thus employed, if it does not advance the cure, it stays the progress of the disease, and mitigates, more perhaps than any thing which I have ever tried, the pain of these terrible cases.

Combined with calomel, or corrosive sublimate, in minute doses, few remedies are more serviceable in scrofulous ulcerations. These commonly appear about the neck, or seize upon the fauces, the tongue, the scrotum in men, or the labiæ in women, and the rectum in both sexes, all which are sometimes of a very intractable nature. As might be presumed, *cicuta* has been found advantageous in the ulcerations of the advanced stages of the venereal disease and most unquestionably, is one of our best means, in the irritable sores of pseudo syphilis.

To some affections even more loathsome than the venereal, the cicuta has been deemed well suited: my remark has reference to several of the cutaneous diseases. Even in leprosy, it has done good, so much so that cures have been effected by its persevering use. The practitioners of this city, or some of them at least, entertain favourable impressions of its powers under such circumstances. In the hands of Dr. Kuhn, it greatly relieved, if it did not entirely cure, a case of leprosy.

Elephantiasis, which perhaps, is a species of this foul distemper, is certainly sometimes successfully managed by the cicuta in conjunction with minute portions of mercury. To this point we have the evidence of the West Indian, as well as of some of the European writers. No opportunity has ever occurred to me of seeing the medicine employed in these more malignant diseases of the skin, though, I cannot doubt, with the facts before me which I have stated, of its utility. My experience is limited to the ordinary herpetic and venereal eruptions in which I habitually prescribe it with conspicuous advantage. Combined with corrosive sublimate, or a very small quantity of calomel, too small even to excite salivation, I am inclined to believe we improve its efficacy.

Next I am to apply our medicine to some very different affections. No doubt in chronic rheumatism, cicuta has often done good. It is a very favourite remedy in the East Indies. I have had re-

course to it in a few instances, always, however, with some one of the mercurial preparations. Combinations of this sort determine to the surface, and promote perspiration. They moreover lull pain, and frequently compose the patient to sleep. It is said that this same prescription is well adapted to the second or third stages of pneumonic inflammation, and there is some reason to presume, that it may be serviceable. Certain it is, that in pulmonary consumption, I have palliated symptoms by the use of mucilaginous mixtures, in which cicuta has been substituted for laudanum. It is far less stimulating than any of the preparations of opium, and is not destitute of anodyne power. Cases are indeed recorded of confirmed genuine phthisis having been cured by this medicine alone. As yet I have never witnessed any such signal effects from it, though it is altogether likely, that it might contribute to heal scrofulous ulcers of the lungs.

Much was once said of our medicine in asthma : the cases however to which it is more particularly applicable have not been pointed out with perspicuity. I formerly employed it a good deal in the Alms-House, and with varied success. To spasmodic asthma, it always seemed to me to be best suited, and as a palliative of the paroxysm, is, at least, deserving of some slight attention.

Even more celebrated has been the cicuta in pertussis. That it proved beneficial in some in-

stances, is too well authenticated to be doubted: but it seems by degrees to have lost its character, and now is wholly rejected. Baffled in my attempts to cure this obstinate complaint, by the ordinary remedies, I formerly resorted to it, and I am not sensible that I did more with it, than by laudanum or paregoric. Like an opiate, it allays the cough for the moment, but makes no permanent impression on the disease.

The hemlock, at one time, maintained an indisputed reputation in the nervous and spasmotic affections. It was particularly commended in epilepsy, hysteria, chorea, the tic doloureux, and in some of the complaints of the alimentary canal. But I suspect the minds of practitioners are now pretty well made up as respects its inefficiency in most of the cases which I have mentioned. No one I am sure would at present think of trusting to it, either in epilepsy or chorea. By very large doses I am inclined to believe that it is occasionally productive of advantage in neuralgia. I have seen eight or ten cases of this extraordinary affection here, and in Europe, and in most of them, the pain was at least palliated by the free exhibition of our medicine.

One radical cure by it was effected by Dr. Fothergill, and lately, my friend, professor Jackson, of Boston, than whom I should in vain look for higher medical authority, has greatly ex-

tolled it. By the very liberal and long continued use of it, I am told, he has been exceedingly successful in several instances of the disease. Emetics, however, have done so much in it, that in the practice of this city, they have nearly superseded every other mode of treatment.

Cicuta has been very indiscriminately prescribed in mania, and of course, with very opposite results. Of its powers in these diversified cases, I cannot speak from my own experience. But it is obvious, that its administration ought to be regulated by pretty nearly the same principles, which guide us in the use of opium. To puerperal insanity, and to that species which is induced by intemperance, it has been thought to be particularly suited. But I have not the least doubt, it is incomparably inferior to combinations of opium and camphor, in both cases.

In concluding the history of this article, I wish to press its great importance. There are indeed several diseases, such as scirrhus, cancers, scrofulous, and some venereal ulcerations, in which it is of inestimable value. We have, perhaps, no medicine, or set of medicines, capable of producing precisely the same effects. Without it, the cases which I have just enumerated would be hardly manageable. Of the cicuta, I am led to enforce my recommendation the more strenuously, as its utility has been denounced by Cullen, as well as

by some later authorities, and is at present not a great deal prescribed.

I have employed it very extensively both in public and private practice, and I am entirely persuaded, that its powers have been much less exaggerated by Størk, than is now generally supposed. As an active remedy, it has lost its reputation, I suspect, from its being usually found in the shops in a very inert state, and, probably, still more, from the small quantity in which it is exhibited. No article scarcely of the *Materia Medica*, suffers more by keeping, or which requires, in order to attain its full effects, to have its dose so rapidly and largely increased.

The extract of hemlock which is imported from Europe, I hardly ever met with possessed of any strength. But the several preparations of the medicine from the American growth, may be had in our shops in great perfection. Being, however, at all times, an article of uncertain operation, I generally begin with about four grains, three times a day, and cautiously enlarge the dose, till it powerfully acts on the system. In many cases, I have given as much as half an ounce of the powdered leaves, or recent extract, in the day, and sometimes nearly double this quantity.

My rule, in short, is gradually to increase the dose, till some very positive effect is produced, and the only circumstances which call for a reduction

of it, are giddiness, nausea, or purging. These coming on, we must intermit the medicine for a time, or lessen the quantity. Boldly prescribed, as I have directed, I may venture to repeat, that the *cicuta* will rarely disappoint our just expectations.

DISCOURSE XXXVIII.

The subject continued.

ATROPA BELLADONNA.

THE deadly night shade is commonly considered as, perhaps, the most active of the narcotics. This is an European vegetable growing in different parts of Italy and Switzerland, which I believe has not been cultivated to any extent in this country.

Belladonna is a perennial plant, usually found in dark and sequestered places, remote from other vegetation. Every part of it is actively virulent. It bears a fruit, when ripe, resembling a cherry, which children have frequently eat, through mistake. The symptoms excited by this indulgence are of the most alarming and distressing nature. These are dryness of the mouth, insatiable thirst, convulsive tremblings of the tongue, difficulty of deglutition, great anxiety about the præcordia, with an inability to vomit. Delirium next ensues, which is accompanied by gnashing of the teeth, and the most horrible spasms and convulsions. At this period the pupil of the eye, remains widely dilated, being insensible even to the strongest glare of

light. The face is tumid, and becomes of a dark red colour. The jaws are locked as in tetanus. Death ultimately takes place, and the body rapidly putrefies, emitting a stench singularly offensive. On dissection, all the marks of extensive mortification of the stomach, intestines and neighbouring viscera, are revealed. But, deleterious as are its effects, when taken in excess, belladonna may still be so managed, as to be rendered a safe and useful medicine.

Experiments have shewn, that besides possessing a very considerable narcotic power, it slightly promotes most of the secretions and excretions, and especially the perspiratory, urinary, and salivary discharges.

Belladonna is one of those narcotic articles, which were much employed half a century ago, and in a very great variety of complaints. Those, however, who were led to its use, speak very contradictorily as to the result of their experience.

As respects epilepsy, chorea, tetanus, and some other cases of neuroses, it is now pretty generally conceded, that not much has been done with it. But of late it is strongly recommended in neuralgia facialis, by an English writer,* and not a little has been said on the continent of Europe, of its powers in hydrophobia.

The state of medical opinion is also low in rela-

* Bailey on Belladonna.

tion to its powers in the treatment of the several forms of mental derangement, and in the comatose affections, as palsy and apoplexy. But it has retained more reputation as a remedy for cancerous ulcers, and other kindred complaints. Even Cullen, who is proverbially sceptical on the subject of medicines, and especially of this very class, expresses some confidence in its efficacy.

After admitting its uncertainty, he goes on to state, that he has known a cancer of the lip entirely cured, a scirrhosity in a woman's breast dissipated, and an ulcer below the eye, which assumed a cancerous aspect, considerably amended by its use. But, continues he, "I must at the same time own, that in several cases, both of scirrhosities and open sores, it has not answered my expectations."

It would be easy to collect, from the writers of the period when the medicine was in repute, many additional facts of the same purport, as those which I have just mentioned in its favour, were it not superfluous to multiply authorities on this point. There can be little doubt from a survey of the whole evidence, that belladonna has occasionally been of service in these cases, and that either from the caprices of medical fashion, or from the dread of prescribing so poisonous an article, it has been prematurely abandoned.

In its operation on the system, our medicine sometimes evinces, as I have before remarked, some diuretic properties, and hence has been used

in dropsy, though whether advantageously, or not, I cannot say. Nor do I possess more knowledge respecting its use in intermittent fever, a disease in which it has been strenuously recommended. It is here exhibited as a substitute for opium to avert the paroxysm.

Applied to the eye, in a weak watery solution, the extract of belladonna will widely dilate the pupil, and it is said, by the action which it induces, the crystalline lens is, in some degree, brought forward. To cause this effect, the medicine has recently been resorted to by surgeons, in the extraction of the cataract, and to facilitate some other operations on the eye.

As yet, I have never employed the belladonna, or had an opportunity of seeing it employed. But I cannot help thinking, that it might be made applicable to many useful purposes, and that we have too hastily excluded it from our practice.

The dose of the medicine is one grain, either of the extract or powdered leaves, or twenty-five or thirty drops of the tincture, to be repeated every four or five hours, and gradually increased.

SOLANUM NIGRUM.

The black, or garden night-shade, as this species is familiarly termed, may be met with very generally, throughout the United States. Whether it is indigenous or not I do not know, though I believe

it is considered by the botanists as a foreign plant, derived from the middle countries of Europe. In its medicinal qualities it closely resembles the belladonna, and may be employed in nearly the same circle of cases. The chief difference consists in the latter commonly exciting the secretory actions, and particularly of the skin and kidneys more actively, and also purges sometimes very copiously.

Never having employed the article or seen it employed, I am prepared to say little concerning it. But like other narcotics of the same family, it was at one time much extolled in scirrhus, cancer, scrofula, scurvy, syphilis, as well as in many of the nervous and mental affections. As a cataplasm, it is said to prove discutient, and lenitive to painful tumors, scrofulous, cancerous, or otherwise, and, moreover, "to abate the violence of inflammation in the eyes, head-ach, pain in the ears, acrid defluxions, syphilitic inflammations, &c. &c."

As a medicine, the dried leaves in the dose of a grain, infused in an ounce of boiling water, are given at bed time, and repeated every night. But the quantity is gradually to be increased, so that some of the sensible effects which I have mentioned, shall be constantly produced. It has, indeed, been remarked, that without such a decisive action on the system, it does no good in any one disease.

SOLANUM DULCAMARA.

The woody night-shade, sometimes called *bitter sweet*, is also found abundant in this country, though it is said not to be indigenous. It delights in a damp soil, protected in some measure from the sun, and hence is to be met with on the side of ditches covered with bushes, or under the eves of houses not inhabited, or other shaded positions. Experience has shown, that while it possesses most of the properties of the preceding article, it is distinguished by some peculiar ones, and is infinitely less deleterious or hazardous.

But, even more powerfully than the black night-shade, dulcamara promotes the action of the bowels, the skin and kidneys, and confessedly with much greater certainty. It proves, indeed, on some occasions, so actively diuretic, that it has been placed with that class of medicines, and it would not be difficult to collect some evidence of its doing good in dropsy. It is, however, in cancerous, and the analogous cases already mentioned under the preceding article, that it has been chiefly employed, more particularly as a wash, where the sores are irritable and phagedenic. My own experience with the dulcamara, is in some degree limited to the syphilitic affections, and now and then I have been exceedingly well pleased with its effects. But I have also derived great advantage

from it in chronic eruptions, which I have known it to remove, when even the better established remedies had totally failed. It is useful too, in chronic rheumatism, and will occasionally afford relief in the painful affections of the advanced stages of syphilis. What are its powers as a deobstruent in glandular obstructions, in which it was once much celebrated, I cannot say from my own observations.

On the whole, I believe this to be a very valuable article, and is entitled to a much more prominent place in the *Materia Medica*, than it at present occupies.

Dulcamara is prescribed in strong decoction, of which the dose is an ounce, often repeated, and gradually increased till a pint or more is consumed daily. This may also be used as a wash.

DATURA STRAMONIUM.

This plant is also known by the more familiar title of *Jamestown weed*, and by a variety of other names, as *henbane*, *thorn-apple*, *stink-weed*, &c.

Doubts have been entertained by botanists, whether the *stramonium* is a native of the United States. Be this as it may, it now grows in every section of the country. It is one of those vegetables, which delight in a rich soil, and is most commonly to be seen on a *dunghil*, or other spots of great fertility.

The stramonium, in its operation on the living system, is among the most powerful articles of the *materia medica*. In many of its properties, it is closely allied to the narcotic stimulants. This, though at one time denied, has been fully demonstrated. By very well-conducted experiments, it appears, that, even in a moderate dose, it produces all those symptoms which denote universal excitement, and if the quantity be much increased, actions follow, of the most violent and irregular nature.

It has been known to excite tetanus, hydrophobia, and the wildest forms of mental derangement. Cases of each of these affections, produced in this way, are recorded by writers of such respectability, as to leave no distrust of their truth.

There is especially, in Beverly's history of Virginia, a very curious account of the effect of this article. It is related by this early historian of that state, that a party of British soldiers having eat freely of the stramonium as boiled greens, they were very soon attacked in a very strange way, or as he terms it, the "effect was a pleasant comedy, for they turned natural fools." "One would blow up a feather in the air, another would dart straws at it with much fury, and another stark naked was sitting up in a corner like a monkey, grinning and making mouths at them: a fourth would fondly kiss and paw his companions, and sneer in their faces, with a countenance more antick than any

Dutch droll. In this frantic condition, they were confined, lest they should, in their folly, destroy themselves, though it was observed that all their actions were full of innocence and good nature. Indeed, they were not very cleanly, for they would have wallowed in their own excrements, if they had not been prevented. A thousand such simple tricks they played, and after *eleven* days, returned to themselves again, not remembering any thing which had passed."

The stramonium was originally introduced into the practice of physic, by Stoeck, to whom we are indebted for our knowledge of the properties of so many of the narcotic poisons. It was employed by him in mania, in epilepsy, and in the spasmodic and nervous diseases generally. As is usual in the annunciation of a new remedy, he ascribed very valuable powers to this article, and was soon imitated in its use, by other practitioners, who confirmed, by their testimony, the accuracy of his observations. More diversified trials, however, gradually diminished its reputation, till finally it ceased to attract any attention. Cullen is one of those who speak slightly of its efficacy, but he does not pretend to have had much experience with it.

In the late revival of the medicine, in the practice of the American physicians, it has been more generally applied to the treatment of disease even than formerly, and especially by us of this city.

I have used it, and seen it used, still more, in epilepsy. Judging from what I have seen, I should say, it is productive of no great advantage. But a very different report has been made of its powers by many eminent practitioners. It would be easy to collect from the medical records of this country and Europe, a considerable number of cases of epilepsy, which are alleged to have been cured or palliated by its steady exhibition. The practice of our hospital and alms-house might afford some of these instances, as at one period, it was a very favourite remedy in both of these institutions. No one, however, seems to have reposed such implicit confidence in our medicine as Dr. Archer of Maryland. In a communication on this subject, he does not hesitate to advance the opinion, that, "the stramonium, in regular epilepsy, is as efficacious as the Peruvian bark in intermittents." Other writers, however, such as Wadenburgh and Lind of Europe, and Fisher and Barton of this country, give us a much more temperate estimate of its properties in this disease. As the result of their experience, they state, that it will often palliate symptoms, and sometimes even effect a cure. After what I have said, it may be collected that my confidence is slender in the medicine, though I would not exclude it altogether in epilepsy.

The stramonium has also been prescribed in

tetanus. No opportunity has occurred to me of witnessing its effects. I do not know that it promises much, though we are told by Dr. Archer, that he once succeeded in moderating the symptoms of the disease by this article, and that a pupil of his actually effected a complete cure by the same means. It is perhaps worthy of further trial.

The evidence to the efficacy of stramonium in mania, is by no means deficient. Many of the European writers speak favourably of it. By Professor Hufeland, it is said to be superior to all the other narcotics, and that he has treated with it, very successfully, the most obstinate affections of the mind. The celebrated Bergius employs pretty nearly the same confident tone in recording its effects. He appears to have tried it in all the shapes of insanity, as in mania proper, in melancholia, in puerperal derangement, in the species which is caused by the habit of intoxication, and also in the low delirium of typhus fever.

In the public institutions of this city, I have seen this medicine resorted to, in a great variety of mental affections, and with very diversified effects. It has undoubtedly, in some instances, proved useful. To this point we have the concurrent testimony of almost every practitioner who has been attached to these establishments. But the practice, so far as I have observed, has not been regulated

with sufficient discrimination, to enable us to designate the *precise* cases, to which the medicine is best suited.

All which seems to have been particularly attended to, is not to administer it in an active condition of the system. I am myself disposed to believe, that it will be found decidedly more efficacious in melancholia, than in any other state of mental imperfection. To this conclusion, I am led by the whole tenor of my own observations. But it has been said by very respectable authority, to display its best powers in mania, produced, or associated with epilepsy, and where the mind is sunk so low as to approach towards fatuity.

The stramonium has been tried in several other affections. It has been given in tic doloureux, rheumatism and palsy, though, as we have no distinct account of the results of the practice, I presume not with much advantage. If, however, I were to determine from the properties of the article, I should suppose it exceedingly well calculated to do good in each of these complaints, and probably in some other cases. Trials, far more extensive than I suspect have hitherto been made with it, ought at all events to be executed.

It is inconceivable, that a medicine so extremely active, should not be more general in its practical applications. Of the diseases, in which it promises to be of the greatest service, are some of those of the

eye, as incipient gutta serena, and in certain forms of neuroses, as well as the cachexiæ.

Exhibited either alone or in combination with mercury, it has, indeed, been found by me useful as a substitute for cicuta, in venereal and scrofulous ulcers of an ill condition. It corrects the state of the sore, and subdues the pain and irritation so common to these cases.

In the management of the diseases I have enumerated, it is proper to persevere in a course of the medicine for one or two weeks, commencing with small doses, and increasing the quantity by degrees, till it produces some striking effect, which is generally evinced by gastric distress, by giddiness, or head-ach, and still more by a dilatation of the pupil, accompanied by vision more or less depraved.

As an external remedy, stramonium has not been neglected. The leaves steeped in brandy are used as an embrocation to rheumatic limbs, and when boiled in milk, are said to make a fomentation, which affords much relief in gouty and other painful swellings. Whether either of these preparations is serviceable I do not know. They are, however, popular remedies.

An ointment formed of stramonium, is also in common use, prepared by boiling the leaves, previously bruised, in lard. It is employed in burns, in hæmorrhoids, in psora, and other herpetic eruptions. In each of these cases, I have

witnessed its good effects, and particularly in piles. This ointment has moreover, on account of its supposed relaxing power, been a good deal resorted to in the case of club feet, and the attestations to its efficacy, are indisputable. I once saw it employed in a painful tumefaction of the knee joint, resembling white swelling with the most signal advantage.

Every part of the stramonium is active. But the preparations employed as a medicine, are, an inspissated juice, or extract, and the dried leaves or seed powdered. Of each of these, the dose is about two grains two or three times a day, to be increased as circumstances demand. I have given twenty, thirty, and forty grains of the medicine in the twenty-four hours, by thus cautiously proceeding.*

PRUNUS LAUBO CERASSUS.

This is not the common laurel of our country, differing indeed, very much from it in its appearance as well as its properties. The lauro cerasus is to be found, so far as I know, in any section of the United States, except it be preserved as a conserve.

It is nearly a century since medical attention was directed to this article. Experiments made at the time, and subsequently, most clear-

* Expectorants, Emmenagogues

ly' evince its prodigious power over the system. Exhibited in a large dose, it extinguishes life at once, without a struggle. But if more moderately given, it occasions convulsions, tetanus, palsy, and those effects generally which are common to all the narcotic poisons. It is remarked by Cullen, as rather a curious fact, in the history of this article, that, however violent its operation may be, it never produces any inflammation, as has been proved by inspection after death. To this circumstance, he seems disposed to ascribe the uniformly speedy and entire recovery of animals which have been subjected even to its most distressing effects.

The laurel has not been much employed as a medicine. In small doses, it is said to lower the pulse, and to diminish the sensibility and irritability of the system. It has on this account been tried in pulmonary consumption, and agreeably to the reports on the subject, not entirely without success.

In the mental or nervous affections, as hypochondriasis, and hysteria, it is alleged to have done good, and we are told, that it imparts tone to the stomach, invigorates appetite, and exhilarates the spirits.

As a remedy in intermittent, it has lately been much extolled, and I understand, is exceedingly efficacious in very inflammatory gonorrhœa, ophthalmia, and similar cases, which, if it be, we can only explain by reference to its powers over the circulation.

As yet, I have never used the laurel, and of course have no experience with it. But, to me it is manifest that it might be made an important remedy in many of the cases, in which the other narcotics have been so beneficially applied. I think it promises much in some of the forms of neuroses, and perhaps still more in scirrhous, cancer, and such like affections. It has, indeed, very recently been said by some German practitioners to cure hydrophobia, and we learn from the same source, that a cataplasm prepared from the leaves, is an admirable emollient application, to painful tumours and ulcers.

As a medicine, the preparations of the laurel are a saturated tincture, and a distilled water, each made from the green leaves, which, in the recent state, are highly fragrant, and intensely bitter, resembling in a considerable degree, in these respects, the peach and cherry leaves, plants to which they are allied by botanical affinity. The dose of the tincture is from five to ten drops, and of the distilled water from thirty to fifty drops.

As just stated, our medicine is eminently narcotic. This property is contained in a volatile principle, which is very apt to fly off in the several pharmaceutical processes, and probably resides in the prussic acid. The odour of this acid, it had long been observed, was similar to that of the laurel, the peach, and the bitter almond. But lately, it has been discovered by Bohn, a German chemist, that

the distilled water of the almond contains prussic acid. It is asserted too, by Schroeder, another German chemist, that it is to be met with in the distilled water of the laurel, which is confirmed by Bucholz, a third chemist of that country, who detected it also in the essential oil. As the prussic acid itself is actively narcotic, are we not warranted in the conclusion, that the narcotic power in all substances depends upon this principle?*

* After the above was committed to the press, I had put into my hands a very important memoir relative to the prussic acid, by the well known Majendie of Paris. The researches of this ingenious experimentalist, while they lend some support to the hypothesis I have advanced, are exceedingly curious and instructive in several other views.

Concentrated prussic acid, prepared according to the process of M. Gay Lussac, he proves to be, of all known agents, the most decidedly active and deleterious in its effects on the living system. A single drop of it introduced into the throat, or applied to the eye, or injected into the vein of a dog, destroyed life as instantaneously as if he had been struck by a "*cannon shot, or by lightning.*" Even the inhalation of the vapour of the acid, which, from the want of care, was done in one of these experiments, caused "*the most excruciating pain in the chest, attended by a feeling of insupportable oppression, which lasted some hours.*" But, poisonous as this article is, it is ascertained that, when properly diluted with water, it may be safely prescribed as a medicine, and, in the pulmonary affections, has been actually used. What respects its medicinal application, is, however, so very interesting, that I shall cite the whole passage.

"We know, says he, "*from the experiments which Mons. Coulon made on himself, that it may be given to the dose of sixty drops without producing any very serious inconvenience. Besides, the pretty frequent use made in medicine, of the laurel water, in which the prussic acid enters, as a component principle, proves that it may be introduced into the stomach. Nothing, therefore, shews any impropriety in its use as a remedy, a circumstance which has already induced some French*

DISCOURSE XXXIX.

The subject continued.

DIGITALIS PUERPERA.

As a medicine, though known for several centuries, digitalis has not been very long introduced into regular practice. In the year seventeen hundred and seventy-five, Dr. Withering was induced

and Italian physicians to give it in various disorders. If their success has not been equal to their expectations, it is because they did not seem sufficiently aware of its mode of action on the animal economy; and without this knowledge it is impossible to make a right use of any new remedy.

“ In studying the phenomena of poisoning by prussic acid, I have often observed, that animals, in which no trace of sensibility, or muscular contractility could be found, would often continue to breathe for several hours, freely; while their circulation, though much accelerated, remained apparently unaltered. These animals indeed might have been said to be dead with regard to their external functions, though still enjoying life through their nutritive faculties.

“ This property of extinguishing the general sensibility without any ostensible injury to the respiration and circulation, the two principal functions of life, induced me first to believe, that the prussic acid might be advantageously used in cases where the disease seemed to owe its origin to a vicious augmentation of sensibility. From that moment I determined to employ it whenever any such case should offer itself to my attention.

“ About three years ago I was consulted in behalf of a young lady,

to make a trial of it in the treatment of dropsy, in consequence of finding it mentioned in a popular prescription against this disease, and the success attending the experiment was so great, that he

aged twenty-seven; who, for the space of eighteen months, had been distressed by a short cough, which became stronger in the evening and in the morning. Alarmed at these symptoms, which seemed to indicate an affection of the lungs, her friends took the advice of several of the most distinguished medical practitioners of the capital, who all prescribed the usual remedies in such cases, but without success. I ordered her six drops of Scheele's prussic acid, prepared by Pelletier, diluted with three ounces of a vegetable infusion; to be taken by spoonfuls every two hours. The following day the cough had considerably diminished, and it disappeared entirely on the fourth.

"The cough, however, having made once more its appearance six months afterwards, I repeated the same remedy with an equal success.

"Since then I have had repeated opportunities, but chiefly with young ladies, to employ the prussic acid in cases of nervous and chronic coughs; and have always obtained the greatest success, without having observed any inconvenience from it. In no case have I gone beyond the dose of ten drops, taken at intervals during twenty-four hours, and diluting it with several ounces of some fluid vehicle.

"Very lately I have succeeded in calming by this same means a convulsive cough, with which an elderly lady of a nervous temperament had been greatly affected, and which for six days previous to my seeing her, had come on by alarming fits, depriving her of all rest. I was so much the more willing to adopt in this case the use of prussic acid, as the patient could take neither opium nor any preparation of poppies without being grievously incommoded.

"After thus having ascertained the efficacy of the prussic acid in the treatment of dry convulsive cough, I thought it was indispensable for me to inquire whether the same means might not be employed with success to combat the cough and other symptoms which overpower the unhappy consumptive—and whether it would not influence, or even suspend the progress of pulmonary consumption.

"The result of my trials has been favourable with regard to the first of these conjectures; and on fifteen persons, affected with phthisis, who

soon afterwards announced it to the public as a most valuable remedy. It immediately arrested much attention, and has since been fully investigated by a number of distinguished practitioners, who

had been placed under my care for the last three years, I have constantly found that the use of the prussic acid, given in small but repeated doses, diminished the frequency of the cough, moderated, and rendered more easy the expectoration, and lastly, procured the patients some sleep at night without any colliquative sweats. Those who are accustomed to follow the march and progress of phthisis, and witness the sufferings without number, by which individuals attacked by this terrible malady are overpowered, will easily appreciate the real benefit of this success.

“ Since the beginning of the month of August last to this day (November) I have had many opportunities of studying the effects of prussic acid on a great number of phthisical patients at the hospital of *La Charité*. Mons. Lerminier, physician to that hospital, in which such diseases are very frequent, has, at my request, agreed to administer the prussic acid in about twenty cases, at the dose of four drops properly diluted with water.

“ The greater number have shewn evident signs of amelioration, and some seem much better at this moment. The cough is considerably diminished. The expectoration has become easy, and sleep came to shorten their sufferings. These improvements became more evident, where the disease was in an incipient state; a circumstance which is not difficult to explain, when it is considered, that the lungs are in a state of disorganization, in the second, and above all, in the third stage of consumption.

“ Yet as I wish to state merely, in this place, the *exact* effects of the prussic acid, I must avow, that amongst the patients of *La Charité*, who have used it, some, whose disease was near its end, did not derive any very sensible benefit from it; and that in two instances, in which the patients had taken the acid at too short intervals, they experienced some head-ach, and a kind of vertigo which lasted some seconds. In a third case it was feared that the acid had proved injurious.

“ From all that precedes, I think I am warranted in concluding, that the prussic acid, given in small doses, mixed with a certain quantity of

confirm the previous account of its virtues not only in dropsy, but also, to a certain extent, in a variety of other diseases.

As a diuretic, I have treated of this article pretty much at length. But there are many cases of disease, in which it is greatly employed, where its good effects are ascribed to the power it possesses of reducing arterial action, and lessening general excitement. It is in this relation of a *narcotic sedative* that it claims to be inserted in this place.

Directed by these views of the powers of digitalis, it has, by some of its more ardent admirers, been resorted to, even in the early stages of phlegmasiae. Absurd as this practice was, many of the ablest physicians adopted it, and who were completely deceived in the result, by the warmth of their devotion to it. In this most extraordinary course the lead was taken by the celebrated Fer-

water, may be advantageously employed as a palliative treatment of consumption, with a view of calming the cough, facilitating the expectoration, and procuring sleep; and that as such it must be considered as the first among the substances usually employed for similar purposes; as it does not seem to excite, like the opiates, any colliquative sweat.

"It still remains to inquire, whether, by the assistance of the prussic acid and of its marvellous activity, we might not hope to render the march of phthisis more slow, and even to cure it. But these questions, in themselves so important, on account of the too fatal prevalence of the malady, cannot be decided by a small number of facts and experiments. They ought, on the contrary, to be multiplied as much as possible, taking at the same time into consideration all the circumstances which might influence the results; and divesting ourselves of all sort of prejudice."—*Majendie on the use of Prussic Acid.*

riar, who maintained the digitalis to be a complete substitute for the lancet. It is well known, says he, "that bleeding is very inadequate to the purpose of lessening the velocity of the circulation, unless it be carried to a dangerous excess. The fox-glove furnishes us with the means of regulating the pulse to our wish, and of supporting a given state of velocity, as long as we judge it proper."

Entertaining these impressions, he was led to exhibit the medicine in cases of synocha, and, as he informs us, "with much advantage." Nor was the confidence of Currie less in its powers. I have, he says, "employed the digitalis to a very considerable extent in inflammation of the brain, of the heart, and of the lungs, and in rheumatism, and have succeeded with it, in situations, where I should otherwise have despaired."

By Mossman, another eminent practitioner, we are told, that "by a judicious management of the medicine, variously combined, pneumonic inflammation may be obviated with as much certainty as the progress of intermittent fever is arrested by the Peruvian bark." In a subsequent publication, he further remarks, "my prediction respecting the future reputation of the fox-glove, will, I have no doubt, be eventually accomplished. In this town and neighbourhood, the plant is now in more general use than any other healing agent, and either in a solitary or combined form, it is employed in almost every case of *increased vascular action*. In

pneumonic inflammation, and in active hæmorrhage, it certainly possesses powers *approximating to specific*, and even in cases of *continued fever*, of various types, I have repeatedly witnessed the most beneficial effects from its administration."

By recurring to the periodical publications of the day, it would not be difficult, were it necessary, to swell the number of authorities in favour of the use of this medicine in the phlegmasiæ and inflammatory fevers. Whatever may have been the support given to this practice, in the first moments of excitement, it is now wholly abandoned, or very feebly sustained.

The phenomena of active hæmorrhage seemed also obviously to call for the use of digitalis, and it has been accordingly had recourse to, in bleedings of every part, from the nose, the uterus, the stomach, and the lungs. Many proofs might be adduced in confirmation of its efficacy in this form of hæmorrhage, and particularly in hæmoptysis and uterine floodings. The publications of the time are filled with cases of its successful administration, supplied too by Currie, Ferriar, and Drake, not to mention a number of other respectable names. Notwithstanding the weight of authority in its favour, I am not a convert to the propriety of the practice. Digitalis can never be substituted for venesection in active hæmorrhage. That increase of arterial action, which causes the rupture of the vessel, is only to be removed by the lancet. Yet,

there are cases, in which our medicine may be serviceable.

Previously to the flow of the blood in active hæmorrhage, the pulse is commonly full, quick, and hard, accompanied with all the symptoms of the febrile condition. The lancet here is indispensable, and also in the first stages of the effusion. But, after a considerable loss of blood, the pulse becomes soft, the skin is cool, and many of the indications of inflammatory diathesis disappear. But though the impetus of the circulation be lessened, it still continues more rapid than in health, and the newly formed cicatrix is unequal to resist it, even when thus diminished. The vessels are therefore again ruptured, and a repetition of the hæmorrhage takes place. It is not always safe under such circumstances, to resort to direct depletion, the system being so much reduced as not to bear it. Digitalis, on these occasions, is one of our resources, and often displays its best powers. As no great inflammatory disposition exists, it abates the force and velocity of the pulse, and this effect may be prolonged without difficulty, till the wounded vessel is completely healed, and recovers its natural capacity of resistance. Even here, however, I doubt whether it is equal to the preparations of lead, ipecacuanha, or squill. But it is well to be in possession of a number of remedies, of nearly similar properties, since cases may arise in which,

owing to peculiarities of constitution, or other causes, some one may be preferable.

But I have said, that our medicine has likewise been much employed in uterine hæmorrhages. These may take place either in the impregnated or unimpregnated state of the womb. The former are usually denominated floodings, and the latter menorrhagia. Floodings are to be managed on general principles. Attended by fulness and activity of pulse, we must have recourse to venesection, and afterwards to those medicines which are calculated to subdue and keep down action. It is with this view that digitalis, if at all admissible, would be proper. But though it has been so generally commended, I doubt whether it is exactly adapted to these cases. I have heard of several instances, and knew of one, where the bleeding became most profuse under its operation. To check this species of hæmorrhage, a medicine seems to be required to have the two-fold power of lowering the force of the circulation, and constringing the gigantic vessels of the pregnant uterus. Digitalis, instead of doing this, has decidedly the contrary tendency of producing a greater degree of relaxation, and therefore of aggravating the mischief. I do not say that such is invariably the consequence, or that the medicine is not occasionally serviceable, but I am convinced that we have remedies infinitely better suited to these cases; and that, on the

whole, the use of digitalis is precarious, and something dangerous.

Let me here repeat, what I believe I have before said, that those uterine hæmorrhages which observe a periodical regularity, are too apt to be confounded with an increased flow of the menses. To this error, we are, perhaps, to impute, in some measure, the uncertainty of our practice in these cases. My own experience tells me, that all very profuse sanguineous discharges from the uterus are hæmorrhages, or in other words *effusions of pure blood*, and these are often to an extent to threaten immediate danger. Genuine menorrhagia, on the contrary, even when most copious, is never alarming, except in its remoter consequences. The former complaint may be checked like other hæmorrhages, by an appropriate treatment. But the latter, as resulting from a natural secretory action of the uterus, will run on to the usual period of its termination whatever may be done, unless the discharge is suppressed by some rash and violent interference.

In *menorrhagia proper*, little else is required during the flow than rest, a cool room, some laxative, as cream of tartar, to open the bowels, and occasionally, if there be pain or irritation, an anodyne. But in the intervals of menstruation, we should endeavour by various means to make such an impression on the system, as may restore to the uterus its healthy actions.

Much was said at one time, of the utility of di-

gitalis in some of the neuroses, as well as in mania. Of the former class of diseases, it has been mostly commended in epilepsy. Never having prescribed it in a single case, I know little of it myself. But I have seen it employed both in Europe and this country, in almost every shape of epilepsy, and never with any manifest advantage.

Digitalis, I suspect, in mania, is a more important remedy. It has at least been very liberally prescribed in this disease, and sometimes with effect. My experience, however, does not enable me to state, with any precision, the indications which it is best calculated to fulfil. Were I to use it, which I have not done, it would be in the acute stages of the disease, though after venesection, purging, and other directly depleting remedies. Exhibited under these circumstances, it might, perhaps, lessen the irritability of the system, and contribute towards calming the agitations of the patient.

With very few, or perhaps, not a single exception, digitalis has been used in all the pectoral affections.

It is even now prescribed in the declining state of acute pneumonia, and in asthma, angina pectoris, dyspnoea generally, and in the cough and hoarseness which follow measles, &c. &c. Conformably to the ordinary prescription in most of these cases, it is simply added to some cough mixture, to keep in check the activity of the circula-

tion, which it sometimes does exceedingly well. But it is to its use in pulmonary consumption that I wish more particularly to call attention.

A few years have only elapsed, since the confidence of practitioners was so strongly placed in this remedy, that consumption, even in its last stage, was by its agency to become almost entirely subject to our control. Need I say, that these high wrought expectations, and brilliant prospects, have never been realized? Yet, it does appear, after making the amplest deductions for the exaggeration of the moment, that digitalis has evinced some valuable powers in the disease. To deny it, indeed, would be to discredit altogether, some of the strongest evidence which has ever been presented in favour of any remedy.

By Darwin, it was early spoken of as an important article in the treatment of some of the forms of phthisis, and not long afterwards it began to attract a very general attention. Ferriar resorted to it in several cases, with considerable success, but no one has used it so extensively as Drake, and his opinion relative to its properties is altogether favourable.

“This medicine,” says he, “has for several years been given in pulmonary haemorrhage with effect, and certainly will continue to be, with the intelligent, whatever may be the result of its trial in phthisis. I am happy, however, to say, that the success which has hitherto attended the exhibition of digi-

tal is in phthisis, has been very considerable. *Many* patients in its *confirmed* state have been cured by this remedy, and almost all have been relieved. Life has ever been protracted by it, and when death has taken place, whilst the system was under its influence, it has been free from pain or struggle. My expectations here have been fully answered."

The papers from which I have extracted the preceding observations, contain the history of fifteen well delineated cases of *confirmed* consumption treated by digitalis, and the result is, that nine were completely cured, one relieved, and five died. These cases, if authentic, are sufficient alone to entitle the medicine to a very great degree of confidence. But I doubt exceedingly, whether so large a proportion of cures was ever effected by any separate article of the *materia medica*, or, perhaps I might add, by a combination of all our resources.

Nearly about the same time that Drake was using this medicine, a series of trials was also made with it by Fowler, and scarcely with less success. Next came the celebrated Beddoes, who, in an essay on consumption, after stating that his experiments fully corroborated all the preceding accounts of the efficacy of digitalis in this disease, makes use of the following emphatic language. "I daily see many patients in pulmonary consumption, advancing towards recovery with so firm a pace, that I hope consumption will henceforward be as regularly cured by the fox-glove, as

ague by the Pernvian bark. Could we obtain a single auxiliary to fox-glove, such as we have in many instances for the bark, I should expect, that not one case in five would terminate, as ninety-nine in the hundred have hitherto terminated. But I believe that a majority of cases will yield to fox-glove alone. It is evident that no new cases need be suffered to advance beyond the first stage, with the application of this medicine, and few into it."

In the year 1800, M'Ginnes, physician-general of the Naval Hospital at Plymouth, in England, determined, if possible, to settle the question, of the degree of efficacy of digitalis by an extensive and diversified set of experiments, with the medicine. Every advantage for an enquiry of this sort he commanded. The cases under his care were numerous, and being in a public institution, he could enforce those observances in the exhibition of the medicine, which are necessary to the accurate appreciation of its properties. But, with every allowance for the peculiarly favourable circumstances in which his patients were placed, his success was extraordinary, and wholly unprecedented.

The number of cases which he has reported, amounts to seventy-seven, of which, fifty-three were advanced in the purulent, and twenty-five in the incipient stage of the disease. Now, of these, forty-four recovered, twenty-two were discharged much relieved, and ten only died. It is worthy of remark, that in all the instances of recovery, the

pulse was reduced by the medicine, considerably below the natural standard, and the amendment seemed commensurate with the reduction.

In the several medical journals of the period of which I am treating, many papers on the subject of digitalis in consumption are given by very respectable practitioners. Without any particular analysis, we may collect generally from them, that this medicine very frequently effected cures, and even where it failed to do so, it almost invariably produced some alleviation of the symptoms. Notwithstanding, however, all these accumulated reports respecting the vast powers of digitalis in the disease, it has of late, most unquestionably, lost much of its reputation, and seems to be falling into disuse. To the extravagant praise which it once received, there has succeeded a more temperate and just estimate of its value. Comparatively very little, has recently been written upon it. The periodical journals no longer contain any of those illustrations of its efficacy, or discussions relative to its properties, which, only a short time ago, engaged so much attention, and even the regular treatises on consumption, do not always notice it as a remedy of much importance.

But this surely is running, in some degree, into the opposite extreme. No doubt can be entertained of the efficacy of our medicine in the pulmonary affections. It is equally true, however, that its success has been very various, and for the most part

extremely precarious. It appears, that though a considerable number of cases, under the general denomination of phthisis pulmonalis, have received advantage from digitalis, yet, where the disease was so far advanced, as to be unequivocally marked, the benefit has not been permanent, and on the whole, it may be safely affirmed, that the chance of success with this medicine, is infinitely less than has been generally affirmed. Determining from my own experience I should say, that it is only suited to the early stages of consumption, and such seems to be the view which is taken of its powers by all the very recent writers whom I have consulted. In a work of Kinglake, better known by his Treatise on Gout, fourteen cases of the disease are given, chiefly in the incipient stage, in about one half of which our medicine was decidedly advantageous. But in the suppurative or ulcerative stages he accomplished only one cure.

It is stated by M'Clean, a writer on the fox-glove, "that it will sometimes cure, when the most approved remedies fail. When of itself it is insufficient to subdue the disease, it will prove a valuable auxiliary to other means. It has always with me quieted and soothed the sufferings of the patient more or less, and where it ultimately failed, it lengthened the duration of life, and smoothed the avenues of death. This is all I apprehend it will be found capable of performing, but this is doing a great deal. Those who expect won-

ders from it, or that it will in general cure consumption, will be disappointed."

In a still more recent work on consumption, by Reid, nearly the same language is held. He observes, "that it is only in the early stages of this disorder, that we can with any confidence hope for a cure. But that, however violent the previous symptoms, if no expectoration of purulent matter has taken place, we may, in general, with safety pronounce the disease curable, and that this remedy, under due regulation, and with sufficient attention to other circumstances of regimen and diet, be then employed with a prospect of almost invariable success. Fox-glove," continues he, "although great, has limited powers, and both reason and experience authorize the conclusion, that where the substance of the lungs is generally diseased, and extensively ulcerated, neither the digitalis, nor any other agent, can effect more than to alleviate the patient's sufferings. This indeed forms the distinctive and melancholy character of pectoral and other affections of organs, which undermine the fabric of mortality, and divide the slender thread by which existence is supported." To these foreign authorities, I may add the sentiments of the medical men of this country, who, whatever might have been their confidence at one time in the remedy, seem now very generally to distrust its powers, and though it continues to be prescribed, it is more from the poverty of our resources in this disease, than

from any high expectations of its performing a great deal.

In the preceding review, I have traced, with some minuteness, the progress of medical opinion relative to the powers of digitalis in pulmonary consumption, that we may be enabled more justly to appreciate its efficacy, and to determine how far this celebrated remedy is deserving of our confidence. Notwithstanding, however, the detail in which I have indulged, I do not know that I have succeeded in my design, the particular forms or cases of the disease still not being clearly made out, to which the digitalis is applicable. Nor, perhaps, can it be done. After all, much must be left to the sagacity of the practitioner, and the power of discrimination, which is alone to be acquired by observation and reflection.

I have before said, that it seems, at present, to be very generally admitted, that the medicine is only useful in the early stages of the complaint, and of this I am fully persuaded. But even here it proves exceedingly precarious, and very often is manifestly injurious, by prostrating strength, and accelerating the march of the disease. Like mercury, and some other articles of the *materia medica*, digitalis would seem, in many instances of consumption, to exchange its *medicinal* for a *poisonous* action on the system, and whenever this happens, we have a train of affections induced, which hurry the case to a fatal issue.

Yet, every practitioner has probably been now and then surprised by effects so strikingly salutary from the medicine, that his confidence in it becomes once more revived, and thus encouraged, he proceeds with its use, till, by the frequency of its failures, or the mischief it occasions, it is again abandoned in disgust and despair.

No doubt much of the uncertainty of the article may be ascribed to the very vague and indistinct notions entertained with regard to consumption, including under one general denomination, which is too commonly done, affections of the lungs, that both in their nature and treatment are essentially different. As the result of no slender experience with digitalis, I am prepared to state, that the only case of phthisis, in which it can be much relied on, is in the incipient stage attended with a slight hæmoptysis, a small, quick, irritated pulse, short and impeded respiration, and a hard, dry, diminutive cough. By subduing irritation, and regulating vascular action, it sometimes proves advantageous, and though even here it will very often disappoint us, still, in the management of such a case, it is one of our resources which ought not be overlooked.

STRYCHNOS NUX VOMICA.

Nux vomica is the kernel or nut of the fruit of a tree growing in the East Indies, to which Linnæus

has given the above title. With little odour, the nut is very bitter, and in its operation evinces some narcotic properties. Largely given, it violently disturbs many of the functions of the animal economy, exciting vomiting and purging, accelerating the pulse, impeding respiration, and occasioning much anxiety and distress about the precordia, followed by nervous tremors, or convulsions, and sometimes by paralysis or tetanus. But, it is said, that whatever may be the severity of its operation, no signs of inflammation are discoverable by dissection, corresponding, in this respect, with the cherry laurel.

In common with the rest of the narcotics, *nux vomica* was at one period pretty generally employed, and is reputed to have done good even in plague, by inducing a plentiful perspiration. But though this statement may be made on equivocal authority, we have sufficient reason to believe that the medicine has manifested no inconsiderable power in the more obstinate forms of intermittent fevers, and particularly in quartan agues. The German writers who seem most conversant with the article have also commended it in mania, and the whole of the neuroses, including epilepsy, and hydrophobia, as well as in chronic rheumatism, gout, cephalgia, the lues venerea, scrofulous sores, and chronic eruptions. To these diseases I may add dysentery, in the epidemic form of which, as

it prevailed some years ago in Sweden, it is stated to have displayed remarkably beneficial effects. It was here prescribed in a large dose once or twice a day, evacuations having been premised, probably as a substitute for opium. But we are told by Bergius, that though it suspended the complaint, for a time, relapses uniformly took place, and that its immediate operation was sometimes unpleasant, and its remoter consequences painful and distressing. I have, moreover, understood, that it has proved serviceable in fluor albus, and in virulent gonorrhœa, the nut, when given in the former of these cases, being previously roasted.

Notwithstanding all this, our medicine seems never to have had a well established reputation, and so little is it at present estimated by the British practitioners, that it is retained in no one of the pharmacopœias of their colleges. But recently, medical attention has been called to it by some interesting communications relative to its use in paralysis. It was remarked, in describing the effects of this article on the system, that it sometimes induces a tetanic rigidity of the muscles. Being persuaded that this is a very constant effect, or one which at least may be commanded, Doctor Fouquier of Paris, some years ago, conceived, that it might be applied to the cure of palsy, considering the latter disease to depend on an opposite or relaxed state of the muscular fibre. During the interval which has since elapsed, the medicine has been

fully tried, and his own experience, as well as that of Dumeril, Majendie, Hebreard, Husson, Asselin, and other highly distinguished physicians, confirms the truth of the speculation, and the value of the practice.

Not long after the administration of the medicine, we are told, that the tetanic condition takes place, and which is to be continued by the repetition of the dose, for a greater or less time, as the circumstances of the case may seem to demand. This state is represented as having all the characteristics of real tetanus, and may be partial, or universal, according to the force and extent of the impression made. What is very curious, it is declared that, by a sort of elective affinity, the action of the medicine, when it is given in the proper dose, is directed to the affected limb, leaving all the sound parts untouched, and this is apt to take place in proportion as the limb is deprived of sensation and motion. But, however violent or general the tetanus may be, no danger results from it: the patient, on the contrary, is so little disturbed, that he often sinks into a sweet sleep.

To attain the precise effect which is desirable, it is recommended to exhibit four grains of the medicine in substance, or two grains of the alcoholic extract, several times in the day, watching with care the operation of each dose, that no mischief shall result. But it is sometimes required very largely to increase the quantity, so much so, that

in some cases thirty, or forty, or fifty grains of the powder have been given at a time.

What degree of credit is to be attached to this very extraordinary account, I am unable to determine. I have never employed the medicine, though I understand it has been done in our public institutions, in a few cases, and with little or no success. But I do not think that we should draw any conclusion against the practice from so imperfect an experiment. Confessedly, it comes to us supported by some of the best authorities of Europe, and so confidently affirmed, that there is scarcely room for doubt or deception. Even admitting, that it was fairly tried in the cases to which I have just alluded, we may discover sources of failure, without impeaching its general value, or the credibility of those by whom it is reported. As much as most diseases, paralysis is diversified by its causes, and while the more simple cases of it are easily managed, there are others, proceeding from some alteration of structure, or mechanical pressure of the brain or its dependencies, which are placed beyond the reach of all our resources.

DISCOURSE XL.

Of Antispasmodics.

MOSCHUS.

OF this set of remedies, the first article which presents itself is musk. This is one of the few substances which, as a medicine, we derive from the animal kingdom. The animal* which affords it is a native of Siberia, Thibet, China, and many other parts of the eastern world. Musk appears to be a peculiar secretion, which is deposited in a sac near the umbilicus of the male. It is imported in small membranous bags, and comes to us in grains which are of a black colour, of a bitter taste, of an unctuous feel, and with a very strong and peculiar odour.

Musk was at one time a very favourite remedy, and as might be supposed from its powers, more particularly so in all the nervous and spasmodic affections. It has been given in tetanus, and according to Heberden, with considerable advantage. He exhibited it in combination with opium, and says, never without affording more or less relief.

* The moschus moschiferus.

To this point many additional authorities might be cited. The West-Indian writers, especially of an early date, bear very decisive evidence to its efficacy in these cases.*

Musk has also been much used in hydrophobia, alone, or with other medicines, such as opium, camphor, valerian, cinnabar, &c. But in common with every other mode of practice, has wholly failed to cure, or even essentially to mitigate the symptoms of this horrible disease. Nor does it appear that it has been productive of much greater service in epilepsy, chorea, or, indeed, of any of the chronic affections of this class. By the powerful and prompt impression it makes on the nerves, it has sometimes been resorted to with utility, in the hysterick paroxysm, and on the same principle, evinces a beneficial effect in spasmodic asthma, and in pertussis, in palpitations, and in most other similar complaints.

Musk has acquired great reputation in the treatment of gout of the stomach. It was originally, I believe, employed in this case by Pringle, whose practice has been since imitated, and fully confirmed. Cullen is among those who report favourably of it, declaring that he has relieved many patients, by the free use of this medicine, who would probably otherwise have sunk under the attack. This is high praise from him, who is always

* Vid. Hillary, &c.

sparing in his commendations of remedies, and I am inclined to suspect, not at all exaggerated.

Like most of the articles to which it is allied, musk has been used in the various states of mental derangement, and is very highly extolled by Hilary, and several other respectable authorities. In the first edition of his *Materia Medica*, which was surreptitiously published, Cullen asserts, without any sort of reservation, that he has done more good with it in mania, than by any other remedy. As, however, he advanced in life, and had a wider scope of experience, he seems to have had his confidence in its powers considerably abated, and speaks of it in language infinitely more measured and qualified.

Musk continues to be employed in all the low states of disease, and it is here that it unquestionably displays its best powers. As early as the time of Meade, it was applied to the management of typhus fever, and has since, amidst the vicissitudes of its fortune in other respects, maintained, with little or no diminution, its reputation. Perhaps, no article, in the latter stages of low fevers, has been exhibited with more advantage. The symptoms which it is particularly calculated to relieve, are, nervous tremors, subsultus tendinum, singultus, and delirium.

Conjoined with volatile alkali, musk has been celebrated for its powers in arresting gangrene,

and, by Mr. Simmons, an eminent surgeon of Manchester in England, this practice is most strongly recommended.

The dose of our medicine is from ten to twenty grains every three or four hours. It is best exhibited in the form of bolus, or julep,* but as it is to many very unpleasant to take, we are compelled, when the stomach is weak, or in the case of children, to direct it as an injection.

An artificial musk is prepared, by pouring three drachms and a half of concentrated nitric acid, on one drachm of the oil of amber, and afterwards thoroughly washing the product. As possessing the properties of natural musk, it is prescribed for similar purposes, though on the authority of the celebrated Bailey of London, it is used more particularly in whooping cough. By him it is highly extolled in this disease, and his praise is never hastily or gratuitously bestowed. The few trials, however, which I have made with it, have not inspired me with an increased confidence in its powers in this disease: yet, in some other cases, and particularly in the spasmodic affections of the alimentary canal, I have derived great advantage from it. As the *natural* musk can hardly ever be procured unadulterated, I suspect it would be best in most instances, to substitute the *factitious*. It is given in the shape

* B. Mosch. gum. arab., sach. alb. $\frac{1}{2}$ j., aq. font. $\frac{3}{4}$ jj., m. st. julep. The dose a table spoonful.

of an emulsion, or julep, and in a dose the same as the natural musk.

CASTOR.

This is a substance procured from the castor fiber, or beaver. Near the rectum of this animal in both sexes there are two little bags, containing a brownish oily matter, which is castor. The best of this article is imported from Russia. That which is commonly found in our shops is derived from Canada, and the northern parts of New England, and is of a very inferior quality.

Formerly castor was in much repute as an anti-spasmodic. By Van Switen, De Haen, and many other German practitioners, it was highly esteemed, in the neuroses, and especially in epilepsy. It has, however, lost its reputation, and now is only occasionally directed by some practitioners of the old school, in the hysterical paroxysm. Castor may be given either in powder or tincture, the dose being, of the former ten or fifteen grains, and of the latter one or two drachms.

FERULA ASSAFŒTIDA.

In some of its properties, assafœtida closely resembles the preceding articles. It is a fœtid concrete juice, obtained from a large plant like the

fennel of our gardens. The plant is a native of Persia, and has not been cultivated in this country. It might, however, be raised in any part of the United States, as I have seen it flourish in the botanical garden at Edinburgh. *Assafœtida* comes to us in large irregular masses, composed of numberless little shining lumps or grains, which are of various hues. It has a strong pungent smell, something like garlic, and a bitter acrid taste. By keeping, it loses its sensible properties, and becomes comparatively inert.

Of all the fœtids, this is one of the most powerful and efficacious. Its action is quick and penetrating, and may be given with great advantage, to meet a variety of indications. In many of the affections of the nervous system, it is much prescribed, and is indisputably useful in hysteria, and hypochondriasis. It was formerly prescribed in epilepsy and chorea, and it is said, with success, though I doubt this exceedingly, its powers being entirely too feeble to contend with such violent diseases. Of late, it has been a good deal substituted for musk, in the last stages of typhus fever, without, however, so far as I have seen, half the effect.

To some of the complaints of the alimentary canal, it seems to me to be well adapted, and especially in states of weakness and derangement by intemperance or other bad habits. It will, under such circumstances, restore tone to the parts, promote digestion, remove the tendency to flatulence,

invigorate the general system, and renovate the animal spirits. Being laxative, it also will obviate costiveness, which is a common, and one of the most mischievous attendants on this depraved state of the stomach and bowels.

By many practitioners, our medicine has been exceedingly commended in all the spasmodic affections of the chest. Its use is perfectly familiar to me in asthma, and I can speak of its efficacy with confidence. I do not, indeed, know that we can manage the distressing paroxysm of this disease, by any other means, with much greater certainty of relief. To be effectual, it should be given in pretty considerable doses, and often repeated.

Nor is its reputation less in whooping cough. The practice in this complaint, at present, in this city, or at least, that practice which I think is very generally adopted, consists in the first place, in purging on alternate days, for a week or more, with calomel, and after the disease is somewhat broken, which it will generally be by this course, to complete the cure by the exhibition of the watery solution of assafœtida. In very invertebrate cases, however, we bring into this plan of treatment, some auxiliary remedies, as emetics, blisters, and even venesection. But these are not often required, if the calomel and assafœtida be judiciously prescribed, and the case otherwise has been properly regulated.

But there are several other pulmonary affec-

tions, in which assafœtida is beneficially employed. It is often prescribed in the second stages of obstinate catarrh, particularly where the expectoration is deficient, and some tightness and difficulty of respiration exists. In circumstances of the same kind it is also applicable to protracted pneumonia, croup, measles, and pulmonary consumption. Whenever, indeed, an active expectorant is demanded, the watery solution of assafœtida will be found useful.

Chemical resolution shews assafœtida to be a gum resin, having, however, very little of the latter ingredient in its composition. It may be given in pills, or tincture, or watery solution. The latter, I think, in many respects, is the preferable mode of exhibiting the medicine, as it acts in this way more promptly than the pill, and is less stimulating and heating than the spirituous preparation. The dose is from five to ten grains.*

ALLIUM SATIVUM.

Garlic evinces very diversified powers, and in some respects is similar to the preceding article. Notwithstanding I have already noticed it on several occasions,* I deem it of so much value, as to require some further attention. Its claims to be

* Expectorants.

† Antilithics, Expectorants, Rubefacients.

considered here, not chiefly on its efficacy in the spasmodic or convulsive complaints of the lungs, and especially in asthma, pertussis, in certain cases of dyspnoea, of croup, and tussis senilis. Convulsions in children are also relieved by it, and I have known it highly serviceable in dyspepsia attended with gastrodynbia, palpitations of the heart, nervous tremors, vertiginous affections of the head, &c. This last is a common and troublesome complaint, occurring in gouty and intemperate persons, and is often a source of great anxiety and alarm. It is not at all dependent on fulness of the vessels, and I believe, nearly always is purely of gastric origin. Be this as it may, I have found it more readily to yield to garlic, than to any other remedy. To the stomach enfeebled by excess of stimulation, garlic commonly proves exceedingly cordial, and it may be remarked that drunkards recur to it almost instinctively. Whether our medicine is of use in any of the neuroses, except hysteria, in which it is sometimes beneficially prescribed, I have not heard.

By Bergius, garlic was employed in intermittent fever with success. Exhibiting one clove of it morning and evening, gradually increasing the quantity, he says, that it hardly ever failed to put off the paroxysms, and that in some instances he completely cured, by the same practice, confirmed quartan agues. Of the truth of this statement, to a certain extent, I entertain no doubt. I have wit-

uessed myself effects, almost as striking from the medicine. Given in any kind of ardent spirits, garlic is much used by the common people of this city, for the cure of ague and fever, and I have repeatedly seen some of the most inveterate cases of the disease removed by it.

Of the external use of garlic, I have already said something under the head of rubefacients. But I may here, perhaps, add one or two observations with advantage.

The expressed juice of it, well rubbed on the spine twice a day, is thought beneficial in whooping cough. There is nothing improbable in the fact, and I am not sure that I have not seen good effects from the remedy.

In deafness from rheumatic affections of the head and other causes, we are told by Bergius, which is corroborated by the testimony of Cullen, that garlic introduced into the meatus auditorius externus, will occasionally afford relief. It may be applied in two ways, either by cotton or wool soaked in the juice, or the clove itself may be put into the ear, wrapt in any thing soft. Whether it will cure deafness I do not know, but I have many times witnessed good effects from this very simple remedy in the ear-ach, though a warm cataplasm of garlic is still more effectual.

OLEUM SUCCINI.

By distillation, an oil is procured from amber, a peculiar bituminous substance dug out of the earth, or found on the coast of the north of Europe. This oil was formerly a good deal prescribed as an antispasmodic, in some of the neuroses. It has, however, gradually lost reputation, and is, at present, hardly retained in the treatment of any disease except pertussis, where it is still highly commended. Yet, I have sometimes recurred to it with great effect, in the singultus of low fevers, and it is unquestionably entitled to attention, as a remedy in pyrosis, and especially where this affection is attended with cramps or spasms. Nor am I altogether convinced that its former reputation in chronic rheumatism and palsy was unfounded: it is at least useful as an external application in both cases. The dose of the oil of amber is from ten to thirty drops.

OLEUM CAJEPUTI.

Cajeput oil is highly fragrant, having in some degree the odour of turpentine or camphor, and the taste of peppermint. It was once supposed to be procured from the *melaleuca leucadendron*, a tree of India, though this is now denied, and with apparently more certainty, it is ascribed to one of the

same class, on which the title of *melaleuca cajeputi* is conferred.

Like most of the articles to which it is allied, this oil is actively stimulant, and is not without antispasmodic powers. Though not very long incorporated into the *materia medica*, its reputation is pretty well established as a carminative or antispasmodic in *tympanites*, flatulent cholic, and whooping cough: and as a diffusible stimulant, is not less prescribed in chronic rheumatism, in palsy, hysteria, and some other of the neuroses. Of these cases, it is now most used in pertussis, and probably with the greatest effect. Externally it is applied to relieve arthritic and rheumatic pains, and in sprains and similar affections. It is also a cure for tooth-ach, put on lint or cotton. The dose of cajuput oil is from five to ten drops, though in the adulterated state in which we generally receive it, much more may be given.

ETHER SULPHURICUS.

When alcohol and the mineral acids are distilled, a liquor arises which is called ether. The product in this case varies according to the acid employed, though there is a considerable resemblance in the general properties of the whole. Of these preparations, sulphuric ether is preferred for medicinal purposes, and it is to it I shall confine my observations.

Ether is a powerful stimulant, and antispasmodic, somewhat analogous to alcohol in its leading effects, though more powerful and less permanent. As an active incitant, it is sometimes prescribed in the low states of disease, and particularly in typhus fever. But its impressions are so evanescent that not much is gained by it, and it is difficult to imagine a case, in which it should supersede wine, &c. With infinitely greater advantage, it is employed as an antispasmodic in cholic, croup, singultus, retrocedent gout, in cholera to check vomiting, and in certain other spasmodic or nervous affections, as in the hysterick paroxysm, in asthma, angina pectoris, &c. Externally applied, it affords relief in muscular pains, also in cephalalgia, and is an excellent remedy in burns. The dose of ether is from a drachm to half an ounce, according to the urgency of the case. But, there are some modifications of ether, in which it is diluted, and may hence be given more freely. Of these, the anodyne mineral, liquor of Hoffman, which differs from ether chiefly in containing more alcohol, is incomparably the best, and is now only employed. As a narcotic, calming irritation, and lulling to sleep, it would seem indeed to be superior to ether itself, and will unquestionably sometimes succeed in these respects, when even opiates fail.

DISCOURSE XLI.

HYDRARGYRUS.

NEXT I enter upon the consideration of mercury in its various relations. This article has most commonly been treated of, under the head of sialagogues, or that description of substances which promote the salivary discharge.

An increased flow of saliva may be excited either by chewing acrid matters, or by the internal exhibition of certain medicines. The first are with great propriety, termed *masticatories*. These, as conducing to no practical purpose, I shall wholly exclude.

The articles which excite salivation, through the medium of the general system, as a pretty uniform result, are limited to the mercurial preparations. It is true, there is a series of others, which occasionally evince this power, such as arsenic, copper, lead, the narcotic stimulants, the mineral acids, and above all, the *polygala senega*. But the effect is partial, exceedingly uncertain, and even when it occurs, answers no curative indication. Considering mercury, therefore, as the only real salivant

medicine, I am unavoidably led to rescind the class of sialogogues.

To me it has, moreover, appeared absurd to affix a title to an article of so diversified an operation as mercury, from an effect that is incidental, not possessed by all its preparations, and which, in many instances, at least, is not necessary to the cure of diseases.

Being so peculiar in its properties, it is very difficult to assign to mercury its proper position among the articles of the *materia medica*. But I do not know that a very precise adjustment in this case is of much consequence. As partaking in a considerable degree the powers of each class, it may perhaps, be as well put between the stimulants and tonics, as any where else, and it is here, that I shall, at least for the present, *locate* it.

In making an application of mercury to the cure of diseases, I must unavoidably be led into a very copious discussion. It is known that no article in the *materia medica* is possessed of more various powers, or which, perhaps, in the present state of our practice, is employed in so many and diversified cases.

Of the medicinal properties of mercury, the ancients were totally ignorant, the physicians both of Greece and Rome considering it, on the contrary, highly poisonous. As a remedy, the first that used it were the Arabians, who enriched the *materia me-*

dica with so many valuable articles. But they restricted it to the cutaneous affections, which they treated with ointments, prepared somewhat in the way of those now in use.

Among the earliest of its applications was to the cure of lues venerea, a disease, which at that time was spreading its ravages over the fairest portions of Europe, and menacing the most calamitous consequences to human happiness. It has been said by some writers, that this discovery, probably the most important which our science claims, was the result of accident, or at least the offspring of empirical practice. By comparing, however, the evidence which has been brought into the controversy on the subject, it appears, I think pretty distinctly, that mercury was originally adopted as a remedy in the venereal disease, by regularly educated practitioners, to which they were led by analogy, having observed its efficacy in other complaints, accompanied with ulcerations, or cutaneous eruptions.

In treating of mercury, I shall commence with its use in fever. This would be a very interesting enquiry, could I enter fully into the subject. But it presents so ample a field, that, with my limits, I dare not encounter it. All which I can attempt will be little more than a few desultory remarks.

The introduction of mercury into the treatment of the febrile affections, is by no means a new practice. By consulting the writers of the early part

of the seventeenth century, we shall find that it was occasionally prescribed, though the remedy seems not to have commanded entire confidence. Of those who employed it, the celebrated Radcliffe was among the most conspicuous. Ever since, however, the reputed success of the mercurial treatment of yellow fever in the West Indies, it has become fashionable in this country to resort to the medicine in every variety of the febrile condition.

The fever of tropical climates, is indisputably managed with greater advantage by the liberal exhibition of mercury, than by any other course. To this point we have the concurrent evidence of the highest authorities. Many of the West Indian practitioners would appear to trust exclusively to this remedy. When the yellow fever occurred among us, the same practice, so far as relates to the copious use of mercury, was imitated. It was applied, as well to evacuate the bowels copiously, as to excite salivation. At first this plan was deemed singularly efficacious, so much so, indeed, that in the enthusiasm of the moment, it was proclaimed, that death never took place after the mercury evinced its effects on the system. But a cooler and more deliberate observation soon exposed the illusion, and we all came ultimately to distrust the propriety of the practice. The fact turned out to be, that the mild cases of the disease got well without it, and when violent, so rapid was the career,

that death took place long before the system could be brought under the mercurial impression.

As described by their best writers, the yellow fever of the West Indies is a bilious disease, the hepatic system being mainly affected in it. But the very reverse of this takes place in the pestilence of our cities. Dissections very numerous, and made under every variety of circumstances, have shewn conclusively, that it is purely a gastric affection, in which the biliary organs have little or no concern. These were rarely found deranged even in the slightest degree. The stomach, on the contrary, was universally met with in a state resembling that which is produced by the action of the corrosive poisons, or in other words, presenting the phenomena of malignant gastritis.

After a considerable fluctuation of opinion, the practice which at last was adopted, consisted of copious venesection in the early stage of the case, pretty plentiful purging with calomel and the neutral salts, of sweating, continued for a length of time, or cold affusions, and of a succession of blisters to the region of the stomach as well as to the extremities. As I have described, such is the outline of a system, embracing certain details, applicable to peculiar symptoms or cases, as they may appear under various modifications.

Condemning the mercurial practice in this case, I am, however, far from doing so in relation to the ordinary autumnal fevers of our climate, and es-

pecially those which prevail in the southern states. Not less from what I have observed myself, than from information derived by my correspondence with the physicians of that section of the country, I am clearly of opinion, that the disease is highly bilious, requiring for its cure strong mercurial purges, to an extent far greater than we are accustomed to employ. Whether it be expedient to urge the medicine in these cases, to the point of salivation, I am not prepared to pronounce decisively. As a general rule, it obviously cannot be necessary. No doubt, however, there may occasionally be instances of protracted duration, or peculiar malignity, in which a salivation may be necessary. This has sometimes been my own practice in our bilious fevers.

By some practitioners mercury, of late, has been employed in typhus fever. We have heard of the success of the treatment by purgatives in these cases.* It is proved by actual examination, that in this disease, the whole of the intestinal canal is loaded with a dark mucus, singularly irritating and offensive. Being removed by purges, and none answer, it is said, so well as the mercurials, the system, which before was prostrate, recovers its tone, and the progress of the disease, if not arrested, becomes more mild and manageable.

But there is another stage of typhus fever, in which the same medicine proves serviceable. To-

* Cathartics.

wards the close of an attack, it is alleged, that calomel given in minute doses, every two or three hours, to stimulate the blood vessels, and not to purge, will now and then produce the most astonishing effects. It here acts, in other words, by exciting a mercurial fever, which subverts the existing state of things. But to effect this purpose, the powers of calomel are very much improved by using at the same time opium, volatile alkali and wine, and mercurial frictions in place of calomel may sometimes be substituted.

As a remedy in intermittent fever, mercury is not unfrequently prescribed. No one will question the propriety of mercurial purges, as a preparative to the use of the Peruvian bark, or other tonics, in recent attacks of the disease. This, however, is not the application to which I allude. Cases of intermittent, kept up by visceral congestion, or long continued habit, are very common in miasmatic districts, and it is under such circumstances that salivation often becomes indispensable to the cure, acting here, by the removal of the obstruction, or dis severing morbid association, as the case may be.

Not a little is said of the efficacy of the mercurial preparations in all the cases constituting the order of phlegmasiae. There are some of these affections, however, in which the medicine has proved peculiarly serviceable, and consequently is more employed. The diseases of the larger glands are of this description, and especially the various mor-

bid conditions of the liver. In the early stage of the attacks of this organ, mercury is rarely demanded except as a purge. The case is better treated by copious blood-letting, topical and general, and other directly depleting remedies. Yet, should it, from extraordinary obstinacy, or defective practice, run on to the chronic stage, or even prove refractory to the remedies mentioned, then a thorough mercurial course can only be trusted. All other remedies and modes of treatment, in confirmed hepatitis, are only feeble temporizings, or dangerous tamperings.

In conducting a patient through a salivation in this disease, it will be proper to introduce the mercury into the system gradually, unless the symptoms are urgent, and in order to mitigate pain, and subdue febrile action, which will occasionally arise, we shall have to recur, in some instances, very frequently to venesection and to blisters. The liver in chronic hepatitis may be affected by scirrhus, by an abscess, by tubercular ulcerations, or placed in a variety of other states, hitherto not accurately defined, and which cannot be satisfactorily discriminated by any set of symptoms. Nor is it of much importance, as pretty nearly the same treatment is to be pursued under all circumstances.

In several of the anginose, or throat affections, mercury is prescribed. The first practical application indeed of this medicine in the United States, except in syphilis, was to the case of cynanche

maligna. Nearly a century ago, it is said, that Dr. Douglass of Boston employed it in this complaint, to excite salivation, and since that period his practice has been variously imitated, some using calomel merely as a purgative, and others combining with it opium, or ipecacuanha, or both, for the purpose of determining more particularly to the surface.

As to my own personal experience, I cannot say much relative to the treatment of this disease by mercury. It has seldom occurred here, since I entered into business, and never as an epidemic. In the few sporadic cases, which have come under my care, I have, after emetics, freely used calomel as a purge, and found it to answer extremely well. But I shall never think of salivating in this disease. By some of the southern practitioners, mercurial gargles are highly spoken of to cleanse the foul ulcers which are incident to the worst forms of malignant sore throat, and they seem to me to be well adapted to this purpose, though I have not used them myself.

In *cynanche trachealis*, some of the respectable practitioners, both of this country and of Europe, trust exclusively to calomel. This medicine was originally employed in croup, by the late Dr. Kuhn, of this city, who prescribed it so early as the year 1770. The Scotch physicians are devoted to the remedy, and consider it as almost infallible, or such at least, seems to be the opinion of some of the most distinguished of their writers.

By one of them it is said, "that in every case where it was employed, previous to the occurrence of the lividness of the lips, and other mortal symptoms, it has completely succeeded, both in curing the disease and in preventing any shock to the child's constitution." His manner of exhibiting the calomel would appear daring, even to rashness, were we not acquainted with the insensibility of the system in this disease, to remedial impressions of every description. To a child of two years old, he has given upwards of one hundred grains, in twenty-four hours.

With Dr. Hamilton, to whom I have alluded, the professor of midwifery at Edinburgh, I am well acquainted, and from his high standing and character, I entertain not the slightest doubt of the veracity of these representations. Nevertheless, I will not take upon myself to support or recommend his practice. The mode which I have suggested of managing this disease, at least as it appears in this country, I must think decidedly more effectual, and certainly less hazardous, as well as repugnant to popular prejudices.*

Mercury is at present greatly employed in pneumonic inflammation. This practice, I am inclined to suspect, originated with the New England physicians. Encouraged by its success in malignant sore throat, as just mentioned, they seem to have extended the remedy to almost the whole of the phlegmasiæ. The only European writer, so far

* Emetics.

as I know, who has advocated the same sort of treatment, is Hamilton, of Linn Regis, and it is certain, that it prevailed in this country long before his time.

Of the efficacy of the practice, there cannot be a doubt, though it requires some powers of discrimination to make the proper application of it. In all cases of genuine pneumonia, it will unquestionably be expedient to premise very copious depletion. But after vascular action is sufficiently reduced, small doses of the medicine, with opium and ipecacuanha, repeated every two or three hours, are highly serviceable, and especially where there is much oppression.

This combination in the secondary stages of pneumonia notha, and especially when it occurs in persons advanced in life, is truly an invaluable remedy. It represses difficulty of respiration, promotes the discharge from the bronchiæ, allays cough, and confirms recovery.

As an expectorant, the modus operandi of mercury is very intelligible. By powerfully stimulating the excretaries, it enables them to throw off the impacted mucus, or phlegm which is afterwards coughed up and expelled. But it is not alone as an expectorant, that we are to ascribe the effects of this remedy. Directed with skill, there is something in the union of calomel and opium, exceedingly striking, in all cases of reduced inflammation, and particularly so of the lungs. Either too early or late in the case, it proves alike ineffectual. The exact

point to recur to it, is when the regular depletory measures having been urged as far as seems consistent with safety, the disease still continues unsubdued.

In the course of the last fifteen or twenty years, our remedy in chronic pneumonia, or pulmonary consumption, has been very highly extolled. But this is by no means a novel practice. As long ago as the beginning of the last century, mercury was used by the well known Radcliffe, in the cure of William, then king of England. It appears, however, to have fallen into utter neglect, till it was revived by Dr. Rush and other practitioners of this country.

That the remedy has occasionally been successful, can hardly be denied. It would, indeed, be easy to collect from within my own knowledge, or, which are on record, a very considerable number of cases, where the disease was said to be removed by a salivation. But whether any one of these was genuine consumption, it is difficult to determine. At all events, the remedy is exceedingly fallacious, and at present, commands little attention. Even those, who, at one time, confided most in its powers, have ceased, in a great measure, to use it.

As yet, I have never had the good fortune to effect a single cure of real confirmed tubercular phthisis by mercury, though my trials with it have been almost innumerable. Convinced am I, that in my private practice, and in that of public institu-

tions, which at different periods I have attended, mercury has been employed in several hundred cases. The result of this extensive experience with it, is, that in no one instance of consumption, accompanied with extensive ulcerations of the lungs, whether tubercular, or otherwise, was mercury of any service.

Nevertheless, there are certain pulmonary affections, in which it is indisputably useful. Where the case depends upon venereal taint, as it will very commonly be found to do among the vagrants of our large cities, or where it proceeds from previous disorder of the chylopoietic viscera, as is by no means unusual, especially among debauched people, or those residing in miasmatic districts, mercury, properly exhibited, will do more than any other plan of treatment.

The case, however, in which it can best be prescribed, is in the incipient stages of consumption, proceeding from ill-cured pleurisy, or catarrh, and this is by far the most common form of the complaint to be met with in this city. Commenced prior to ulceration having taken place, or advanced to any extent, a moderate salivation continued for several weeks, will almost invariably arrest the progress of the attack, and after a while wholly irradicate every tendency to the disease.

What, upon the whole, I wish to impress, with respect to mercury in consumption, is, that under the circumstances which I have just stated, it will

be productive of advantage, though in consumption caused by tubercles, or even by an extensive abscess, it is eminently mischievous. In the former of these cases especially, it seems uniformly to operate as a poison, breaking down, as it were, the fabric of the constitution, and accelerating, with frightful despatch, the fatal issue.

During the season, when such sanguine expectations were indulged as to its powers over this formidable disease, it was indiscriminately resorted to in all cases, without the slightest regard to circumstances. The consequence was, that the practice gradually declined, and is now nearly abandoned.

Of mercury, as a remedy in rheumatism, I have not much to say. It seems to be sufficiently admitted, that in all cases of the disease which prove intractable to the ordinary measures, it should be tried. Exactly as in pneumonic inflammation, the union of calomel, opium, and ipecacuanha, is here used with benefit. The propriety of a salivation, however, in this disease, is disputed. By Clarke, who has written on the diseases of long voyages, we are told, that though mercury was otherwise of the greatest service, it never failed to aggravate and protract the complaint, when it touched the mouth. But this opinion, which, if not peculiar to the writer who advances it, is certainly not confirmed by general observation and experience.

In my own practice, I have often carried mer-

cury to salivation in rheumatism with very marked advantage, and such is the course pursued habitually by the practitioners of this city. Cases, indeed, of the disease do sometimes occur, which will not all yield till the mouth becomes affected, and, to accomplish a radical cure, the mercurial impression must be sustained for a very considerable period.

To salivate in syphilitic rheumatism is a practice universally pursued. No one will doubt the propriety of this course, where there is really a remnant of venereal contamination. But I cannot help entertaining the conviction, that such cases are of much rarer occurrence than is generally imagined. My experience teaches me to consider for the most part, what is usually called syphilitic rheumatism, as purely a mercurial affection brought on by the profuse and indiscreet employment of the medicine. But whether my theoretical notions on this subject be correct or not, I have at least found, that such cases are infinitely more manageable by a different system of treatment, substituting in the place of mercury, sarsaparilla, &c. Nevertheless, I do not mean to convey the idea, that in the rheumatic affections following syphilis, we are never to resort to mercury. My object is merely to enjoin some degree of caution and discrimination in its use in such cases.

Mercury has been found beneficial in certain forms of ophthalmia. Every one will admit its utility when the case has its foundation in venereal

contamination. But independently of any vitiation of this sort, the eyes are subject to a very protracted species of inflammation. The cases to which I allude, are usually attended with considerable uneasiness of the head, and particularly by pain, often exceedingly acute, over the orbit of the eye. Examples of such affections, I have repeatedly witnessed, which have continued with unabated violence, for many weeks in succession, resisting the most active remedies, such as general and topical bleeding, purging, and blistering, which have, at once, given way to a very slight salivation.

DISCOURSE XLII.

The subject continued.

IN the management of hæmorrhages, it sometimes becomes necessary to have recourse to mercury, and particularly in hæmoptysis, which pertinaciously resists the milder measures. The impression on the mouth made by a salivation invites morbid action from the lungs, and by the general and revolutionary operation of the remedy on the system, it may entirely supplant the disease, substituting its own peculiar action in place of it. Nor am I aware that the remedy is much less effectual in uterine hæmorrhages, though, perhaps, it is not so often employed. The case in which it proves most serviceable, is in those regular discharges of blood which take place at the period of the cessation of the menses, or as sometimes happens at a much more advanced age, which though they may arise from mere relaxation of the vessels of the womb, are more frequently caused or associated with a tendency to scirrus. Combined with cicuta, and aided by a milk diet, these cases, if not too long delayed, will generally submit to mercury.

As might be anticipated, mercury has not been neglected in the profluvia, and especially the bowel

affections. Every one knows its superior powers as an evacuant in obstinate constipations, from whatever cause proceeding. Besides its efficacy in the spasmotic constrictions of the intestines, it is said to be singularly beneficial in *cholica pictonum*. By Clarke it is advised that fifteen, twenty, or thirty grains of calomel be given at a dose, and he states, when thus exhibited, it hardly ever fails to open the bowels and to remove the disease. But in a late tract on this subject, of very great merit, by Clutterbuck, calomel is directed in small and repeated doses, with a view to salivation. Each of these modes of employing the medicine may be serviceable, though they are adapted to very different stages of the disease. Largely given, it is calculated at once, to break the force of the attack, by overcoming constipation, and the other to subdue any lingering affections which may still exist.*

As a part of the treatment of dysentery, the mercurial medicines have been deemed very important. By Cleghorn, who acquired so much reputation by his work on the diseases of Minorca, six or eight grains of calomel, with one of opium, were exhibited with a view to purge, and, he declares, that

* My plan of treating *colica pictonum* has been so recently mentioned, that I shall, in noticing the subject again, merely remark, that when it proceeds from lead, which is by no means the only cause of it, I know nothing which so effectually removes the paralytic affections and other consequences of the disease, as a moderate salivation.

it answered more effectually than any other medicine. I have already mentioned* the advantages derived from large doses of opium and calomel in those unrelenting obstructions of the bowels dependent on spasm, and it is quite conceivable, that on the same principle, such a combination might be useful in certain cases of dysentery.

As I have stated, Cleghorn originally prescribed calomel and opium as a purgative, but he was ultimately convinced of the superior efficacy of salivation in these cases. This taking place, he even asserts that a cure invariably followed. Nor does the efficacy of the practice rest exclusively on his own authority. On the contrary, it has been equally successful in the hands of Lind, in the west, and was found not less so by Balfour, and by Yeates and Maclean, in the East Indies. Each of these writers approves of exciting salivation speedily in dysentery.

Having in another place detailed my mode of managing this disease, I shall not now indulge in any recapitulation of it. Combinations of calomel, ipecacuanha, and opium, with a view of quieting irritation and determining to the surface, have, at all times, been a favourite prescription of mine. Before dismissing the subject, I will only further remark, that in protracted or chronic dysentery, I have frequently salivated, and found it sometimes

* Cathartics, Opium, &c.

the only means by which I could effect a cure. Yet, in the acute forms of the disease, I should presume that it can hardly be expedient to resort to this very unpleasant alternative, though, it is probable that whenever salivation is excited, it will have a beneficial tendency.

My remarks are applicable chiefly to the disease as it appears in this city. There can be no doubt, that in warmer climates, as the East and West Indies, and in the southern sections of our own country, where the hepatic system is deeply implicated in this and in most other affections, that the mercurial treatment of dysentery is much more frequently demanded. As it occurs here, dysentery is an highly inflammatory affection, calling, in the first instance, for the prompt and free use of all the direct depletory measures. To this general character of the disease there is one exception. Dysentery, among our poor and depraved classes of society, now and then wears the typhus type, and such is generally the case when it breaks out in crowded and ill ventilated apartments, being, under such circumstances, propagated for the most part by contagion. Assuming this form, depletion cannot be urged to any great extent, and I have early put the system under the mercurial impression, and been well pleased with the result.

As a dernier resource in diarrhoea, mercury should not be overlooked. Cases of a very protracted and obstinate nature I have repeatedly seen

to yield to it. It is, indeed, an almost indispensable remedy where indications exist of derangement in the chylopoietic viscera, and even if this is not so, it proves of service by instituting a new set of actions.

Exactly on the same principle, mercury is prescribed in dyspepsia. No inconsiderable proportion of the cases of this complaint which have come under my care, could be clearly traced to some visceral obstruction, and commonly of the liver. Of the utility of mercury here, no one will dispute. But there are some other instances of dyspepsia, which proceed from a wrong action in the vessels of the stomach itself, producing a vitiated secretion of the gastric liquor, sometimes acid, or otherwise exceedingly disordered. Minute doses of mercury alone, or in conjunction with ipecacuanha and opium, I have known to redress the mischief, and perfectly re-establish the healthy condition of this viscus.

Of the class of neuroses, there is, perhaps, no case in which mercury has not been used and even extolled. As relates to epilepsy, I cannot say much of its powers. I have seen it tried in a large number of instances of the disease, and I fear with little or no advantage. It is, however, said by some practitioners, to have effected cures, and even where it does not do so much, that it mitigates the symptoms, and suspends the paroxysms. I confess that I have experienced no such effects

from it, and after sufficient experience, I am half disposed to reject it altogether in this disease. Epilepsy is undoubtedly sometimes occasioned by effusions of water into the ventricles of the brain, and if mercury ever does good, it is probably under such circumstances. But desperate indeed must be the case which proceeds from this cause!

Of the utility of mercury in tetanus, I am not prepared to advance any very confident decision. This is a disease which arises from a variety of causes, and requires the same diversity of treatment. Cases of it proceeding from a constipated state of the alimentary canal, which submit very readily to active evacuations, and mercurial purges, under such circumstances, are useful. But in symptomatic tetanus, or that originating from wounds, or other injuries, I do not know that mercury is of the least service, the progress of these cases being so rapid for the most part, that long before it can take possession of the system, death ensues. But its efficacy is attested by very many writers, and as its use, particularly in the shape of frictions, cannot interfere with other remedies, it may still be retained in the management of this disease.

As a preventive of tetanus, I suspect that mercury is serviceable. To fulfil this indication, the wound is to be dressed with strong mercurial ointment, and small doses of calomel are exhibited in-

ternally. This is the ordinary course pursued in the warm climates of the East Indies, and which is reported to be attended with distinguished success.

Highly as mercury has been celebrated in hydrophobia, I do not think it necessary to indulge in any copiousness of remarks on the subject. Medical opinion seems now to be pretty well made up as to the impotency of this and all other medicines in the prevention, as well as the cure of this most intractable disease. As a prophylactic, nothing can be trusted except a complete excision of the inoculated point, and as relates to the cure we have not a single remedy, as I have before more than once said, in which the slightest confidence can be reposed.

Believing as I do, that the disease consists in a tribe of associated motions, the primary link of which commences at the original seat of irritation, I am thoroughly persuaded that the extirpation of the part at any period prior to the accession of the attack, would prove as effectual as if it had been done when the bite was originally inflicted. Nor, indeed, do I know whether the extirpation of the part on the first signal of the attack, might not avert the further progress of the disease, precisely in the same way as the removal of the irritation of the wound puts an end, in some instances, to the series of convulsive motions which constitute tetanus. Nothing is much more preposterous than the

common opinion, that the virus in this case, enters the circulation, and in this way produces its effects. All diseases, though it is more strikingly illustrated in such as are propagated by inoculation, commence at a point, and are generally extended through the medium of sympathy, or association, till more or less of the whole system is brought into participation, producing what is called a constitutional affection. Do we not arrest altogether lues venerea by the destruction of chancre, though the latter may have existed for many days, and are we not equally apprised of the fact, that the same thing happens with respect to vaccination, and hence care is always enjoined to prevent any injury of the pustule?

To the cases already enumerated in which mercury is commended, may be added paralysis, tic doloureux, dysphagia, gutta serena,* and several others that do not require to be particularly detailed. It may be collected from what I have said, that though I do not repose much confidence in its

* Exhibited for a long time as an alterative, and afterwards urged to a salivation, it is said that mercury is sometimes productive of very great advantage in this complaint. But this state of the eye is dependent on such a variety of causes, that our practice must be exceedingly empirical, and of course not very successful. It is true, that Mr. Ware, the celebrated oculist, has told us, that mercury is chiefly useful in those cases accompanied by a very contracted pupil, and which he considers, are most probably occasioned by an internal inflammation. Whether such instances are readily to be distinguished, I will not pretend to decide.

powers in some of the more formidable of these affections, still, where any one of the class can be traced to a sympathetic connection with a disordered condition of the digestive apparatus, it holds out, I think, the best prospect of success, and should never be neglected.

To treat mania by the mercurial medicines, if not an American practice, is certainly much more prevalent among us, than in Europe. It is one, at least, to which the medical men of this city are exceedingly devoted.

Yet, I do not think that we have determined, with sufficient precision, the cases to which it is best suited, and hence the results of our experience are very different, and even contradictory. It is resorted to in each form of mental derangement, as well in furious mania, as in melancholia, and perhaps, with nearly equal success. All which is particularly attended to in the employment of the remedy is, to see that the system is properly reduced, or in other words, brought down by bleeding, purging, and other evacuations, to the point of salivation. This being premised, mercury unquestionably will often effect cures under circumstances apparently the most discouraging. It is, in short, a principle with the practitioners of this place, to appeal to salivation as a resource in all cases of insanity, which have pertinaciously resisted other modes of treatment, and, though this

may be empirical practice, it is fully justified by the frequent success of which it is productive:

'That the utility of mercury in the mental affections may in part be ascribed to its general powers over disease, seems highly probable. But I cannot help entertaining the conviction, that it does infinitely more good by specifically acting on the chylopoietic viscera, correcting the derangement in this system of parts, which would seem to be the cause, in very many instances, of the morbid states of the mind. Extraordinary as this *location* of insanity may appear to such as have not contemplated the subject, it neither wants the support of authority, nor the evidence of analogy, or of positive facts. It is now pretty generally conceded, that the whole class of neuroses is of gastric origin, or, at least, generally so, and considering the close affinity which exists in the physiology as well as pathology of the nerves and brain, it is surely no great stretch of generalization to embrace within the same view the two sets of cases.'

Can it be denied that the cephalic and mental disorders are very frequently induced or imitated by impressions on the stomach and its dependences from the narcotic poisons, worms and other causes? Every practitioner of much experience has probably seen this repeatedly illustrated in apoplexy, palsy, hydrocephalus, cephalalgia, in the depravation of vision, and in mania, melancholia, and hypochondriasis.

dria, and all which is abundantly confirmed by dissection.

It had long been a matter of surprise with pathologists, that, in the diseases of the mind, the morbid appearances of the brain should be so few and slight, sometimes indeed, none whatever existing, even though the case were furious mania. Being conducted under the predominant notion that the brain must necessarily be the seat of these affections, examinations were rarely extended beyond this organ, and consequently, the real source of mischief continued unrevealed. But of late, the cultivators of morbid anatomy in Europe, have thrown a very clear and distinct light on this subject, demonstrating incontestably, that we are to seek in the chylopoietic viscera, for the causes of very many of the nervous and mental complaints. The facts thus developed, have laid the foundation of a correct pathology with respect to this interesting set of diseases, and will, no doubt, as has already in some measure been done, lead to a more exact and successful mode of treatment. But, while I maintain generally the connection of these cases with certain disordered states of the abdominal viscera, I myself am not at all disposed to deny, that they may take place as idiopathic affections of the cerebral and nervous systems.

Many of the cachexiæ are treated by mercury. In dropsy of every form it is prescribed, and sometimes proves among the best of our remedies.

Elsewhere, I have dwelt with the strongest emphasis on its powers in hydrothorax. Combined with the squill in the proportion which I there stated, it is, indeed, so effectual in this disease, as almost to take it out of the catalogue of the reproaches of our art.

To ascites and anasarca it is also well suited, though not so conspicuously as in the accumulations of the chest. These varieties of dropsy, however, do often arise or are kept up by visceral obstructions, and whenever this happens, mercury is indispensable to the entire removal of the complaint. Nor, perhaps, does it do less good, in some instances, by arousing the action of the lymphatics, a system of vessels on which much of its power is usually expended. Yet it must be confessed, that it often disappoints our expectations, and that the cases have not hitherto been accurately designated to which it is applicable. To me it has always appeared to be alike inappropriate to febrile or inflammatory, and to the weak and leucophlegmatic dropsy, and certainly so, if the latter be associated with any scorbutic or strumous contamination, mercury always acting hostilely in such depraved habits. Dropsy, with some degree of tone and soundness of constitution, is the sort in which mercury operates most beneficially, though even here it should not be resorted to, till arterial action is pretty well reduced.

As regards its utility in the complaint denomi-

nated hydrocephalus internus, medical opinion does not seem so unanimous or decided. There are some practitioners who believe, that neither this nor any medicine is of the slightest service, while others, more sanguinely maintain, that by a proper perseverance in a mercurial course, it proves very manageable. It is manifest, that these contradictory accounts proceed from the opposite views which have been entertained of the pathology of the case.

The proximate cause of the disease, or the disease itself, consists in an increased and altered action of the vessels of the brain, producing an effusion of water into the ventricles, or some derangement in its organic structure, from the continuance of morbid impressions on it. Now, it is very obvious, that our success will be different under these opposite circumstances. Attacking the disease itself, we shall most generally cure it, however we may be baffled in our attempts to remove the effect of it.

Of course, it would be wrong to resort to mercury in the incipient or early stages of hydrocephalus. The treatment, at this period ought to consist of venesection, very copious purging, and the application to the head of cups, leeches, and blisters, with a most strict adherence to the antiphlogistic plan in all its parts. By pursuing steadily such a course, the disease will very often be arrested. But it is worthy of particular recollection,

that in hydrocephalus, it is by no means rare, at the expiration of ten or fifteen days, where the disease has advanced rapidly, for the more violent symptoms to subside, so as to induce an expectation of a speedy recovery. This is sometimes a most treacherous and fatal calm, as it results from effusion having taken place. The vessels which had previously been so much excited, are in this way relieved, and the attack is completely suspended. After a short interval, however, the extraneous fluid acts as a re-exciting cause, and the disease returns with redoubled force. Under such circumstances, the case may be considered as desperate, or nearly so.

Effusions into other cavities may be taken up, but experience teaches us that it rarely happens in these cases. As yet, no one, except Muscani, has pretended to have detected absorbents in any portion of the brain, and by many, their existence, even at the present day, is denied. But surely, their not having been satisfactorily ascertained, is owing to the imperfection of our anatomical researches, as the phenomena of growth, not to mention other facts, sufficiently attest, that they must belong to every organ and part of the animal machine.

An absorbent is as necessary an ingredient in the composition of a living body as a blood vessel, each being indispensably necessary to the execution of its primary and most important vital func-

tions. Even admitting, however, the existence of lymphatics in the brain, it is still not less true, that they act very feebly and incompetently in the hydrocephalic affections. Yet, on this account, we should not be discouraged from urging the use of mercury in these cases. By the common consent of practitioners, it seems now to be conceded, that no plan of treatment holds out such prospects of success. Even where effusion has not taken place, it is serviceable by changing the action of the vessels, and diverting the complaint from the head. But, if water exists, it is the only remedy entitled to the slightest confidence.

To be effectual under such circumstances, the mercury must be applied in a very bold and decisive manner. It should be exhibited in as large a quantity as the stomach and bowels will bear, and externally applied in the shape of frictions, with the strongest ointment, most diligently and copiously. To do less than this, in these desperate cases, is to trifle with the remedy, to practise injustice to ourselves, and to cut off the only chance which the patient has of salvation.

I have remarked, that the proximate cause of this disease is an increased and altered action of the vessels of the brain, and that the effusion is merely the effect, and which I now add, is not a uniform one. It has, indeed, been recently held by a writer of great intelligence, that the effusion, so

far from constituting the disease, is not either the principal, or even accessory cause of death in the case, but, on the contrary, operates to the protraction of life, by imparting to the brain a certain degree of tone and support, which, under such circumstances, it would lose. Whether this is only a plausible hypothesis, or is really the fact, I will not take upon myself positively to pronounce. Certain it is, however, that water will continue in the ventricles, or, at least, we have every reason to suspect its existence, in some instances, for weeks or months, or years, without destroying life.

But though I place the proximate cause of hydrocephalus in a morbid action of the brain, I am not the less persuaded, that, in a large majority of cases, it commences in a disordered state of the stomach, or some one of the chylopoietic viscera. To this conclusion I am conducted, by the well known association which exists between all these parts, and by various considerations which may be deduced from the history of the disease, such as the great disorder observed in the chylopoietic viscera, sometimes for weeks before the appearance of hydrocephalic symptoms, the removal of these symptoms by purgatives, and other remedies directed to the alimentary canal, the extreme tenderness felt in the regions of the stomach and liver, the obstinate constipation attending at this period, in the peculiarity in the stools, indicating extreme

ivation of the biliary secretion, and the phenomena exhibited on dissection, proving the previous existence of no slight disease in most of the abdominal contents, and especially in the stomach and liver, and sometimes none at all in the brain.

Of the use of mercury in the diseases of the skin every one has heard. Exceedingly numerous as these affections are, there is hardly one in which it is not prescribed. The success, however, which we derive from it is very variable, and on the whole, we may consider it, in most of them, as a precarious remedy.* But it often happens, that when it fails given internally, it will answer if applied directly to the surface in the form of an unguent or wash. This is especially the case in itch. No quantity of mercury taken internally will remove the complaint, or even make any very sensible impression on it, though used in the way I have mentioned, it is very effectual. Whoever has attended much to hospital practice, where cases of psora and syphilis are often to be met with in the same person, must have seen this remark very repeatedly exemplified.

The fact is, no diseases are so unmanageable by constitutional remedies, as those of the skin, and particularly of the cuticle. This proceeds from their being seated at the extreme verge of the sys-

* It is remarked by Willan, in his work on the diseases of the skin, that if he could only point out the proper application of mercury in these complaints, the end of his labours would not be entirely lost.

tem, and in a great degree removed beyond the sphere of the circulation, and the agency of the vital powers. Exactly as disease is near to the great organs which sustain life, so is it violent, and I believe curable, provided we proportion the powers of our remedies to the vehemence of the case. As regards the exanthematous, or acute affections of the surface, except as a purge, mercury has entirely lost its reputation, not being now used even as a preparative to the smallpox, the purpose for which it was longest retained. But it is still directed in some of the chronic cases, and particularly of a herpetic nature, though, as I have just mentioned, not with much certainty of success. Of course, I do not include in this remark, the venereal eruptions. Considering the analogy between lepra and some of the diseases in which mercury is advantageously prescribed, we might presume it would be adapted to it. Little confidence, however, seems to be reposed in it by those who have had opportunities of making the trial. It is stated, that, though for a time it arrests the disease, it hardly ever fails to relapse in an aggravated shape. Yet, in elephantiasis, which is commonly held to be a species of leprosy, we are told, that the best treatment consists in mercury and the stimulating dia-phoretics. Of these diseases, I have seen too little to advance any opinion relative to the practice to be pursued in them.

In relation to the use of our remedy in scrofula

there is some difference of opinion. Cullen tells us, that he has never found "mercury or antimony in any shape, of service in the disease." But he is certainly mistaken, as later experience has sufficiently shown. Copious purging with calomel is exceedingly effectual in the commencement of scrofula, and small doses of it, or corrosive sublimate, variously combined with the narcotics or tonics, as the case may require, are prescribed with advantage in the advanced stages, to discuss tumors or resolve indurations. But with this view it requires to be continued for several weeks, or even a longer time, and so managed, as to attain its alterative without the salivent effect, the latter always proving, when fully established, at least, very highly mischievous.

Of scrofula, however, we have little in the United States, as it never originates among us. The cases occasionally met with, are confined to foreigners, or their immediate descendants. The plenty and comfort of our happy land allow not of its production, and soon eradicate any hereditary tendencies to it.

I have already said something of the value of mercury in the glandular affections. As commonly seated in structures of this sort, it is right, that I should here make a remark or two on scirrhus and cancer. But these are subjects coming more immediately within the province of surgery, and of which I have no great experience. It appears,

from the older writers, that mercury, among a variety of other remedies, was much used in these cases, and though we are not without some facts of its occasional success, its reputation, at least, in open cancer, is entirely gone. The present opinion seems to be, that it rather aggravates than benefits the disease, though it is still admitted to be useful in the discussion of scirrhouſe tumours, in that stage of simple obstruction which precedes the alteration of structure or organization. With this view it is given in small doses, and applied in the shape of frictions, or of a plaster, to the tumour. Much might be said of the use of mercury in ulcers generally. To do justice, however, to this subject, requires more surgical skill and discrimination than I possess, and therefore I decline it.

DISCOURSE XLIII.

The subject continued.

THE use of mercury in the venereal disease has been so ably and fully discussed by many distinguished writers, that it would be superfluous in me to engage in any elaborate disquisition relative to its applications. My design is merely to call attention to one or two remarks, which I deem of some consequence.

In the universal terror excited by this disease, practitioners were disposed to suspect almost every disordered appearance of the genitals, or neighbouring parts, as having its origin in venereal contamination. This solicitude, has unquestionably been the source of much mischief, and, as it still prevails to a very considerable extent, the same consequences daily arise from it. Contrary to a very general impression, I am entirely persuaded that syphilis, as well as the other form of the disease, is, comparatively, a rare occurrence, so much so indeed, that I believe a very large proportion of the cases in which I am consulted, with the venereal aspect, are really not of this nature.

In all warm climates, the secretory surfaces of the organs of generation, are apt to take on a mor-

bid state, by which the discharges become depraved, and often extremely acrid, excoriating the parts, and producing ulcers, so nearly resembling the true chancre, as readily to be confounded with it, by one who is hasty in observation, or possessed only of a narrow and imperfect experience.

By consulting the medical writers of antiquity, and especially Celsus, we shall find an interesting record of a great variety of affections of the genital system, which, in all the leading circumstances, are analogous to venereal cases. The Old Testament itself, also furnishes us with the same species of evidence. The ancient inhabitants of the east, were exceedingly subject to such complaints, and there can be no doubt, that the practice of circumcision, like many other parts of the Mosaic code, relative to the preservation of health, was instituted with the view of preventing these very diseases, and that in order to add solemnity to the observance, it was interwoven with the existing system of religion. By the removal of the prepuce, this end is attained, as well by avoiding the entanglement of the virus in the folds of the membrane, as by the greater consistence which is given to the texture of the surface.

The ulcers to which I have alluded, or some of them at least, commence like the chancre, sometimes run precisely the same course, and are productive of very similar effects. Cases have sometimes occurred to me, where, from negli-

gence, or improper treatment, or great malignity, the ulceration has assumed a very alarming aspect. I have seen it to extend its ravages so as to produce deep excavations in the very substance of the penis, and at the same time, throwing up very irregular and unhealthy granulations.

But though, unquestionably, the disease which I have described, is very distinct from the venereal, as is shown by its exacting a different treatment, it still so closely resembles it in many of its characteristics, as even to exhibit not a few of the constitutional affections. An hundred times I have known this description of sores produce, as I before stated, effects very similar to *lues venerea*, such as swellings in the groin, followed by diseased throat, and even by eruptions on the surface of the body.

There has lately appeared a work, by Mr. Carmichael, a distinguished surgeon of Dublin, in which my views on this subject are fully entertained, and even carried to a greater extent than I have hitherto ventured to do.

Without descending to details, in which it would be improper for me to indulge, I may, perhaps, convey his opinions in a summary or general statement. This very original and ingenious writer maintains, that there are at least three distinct poisons, which, operating on the genital organs, produce primary local symptoms, followed by secondary constitutional diseases.

1. The *syphilitic*, characterised by chancre, succeeded by a scaly eruption, which he considers as the only species caused by venereal contamination.

2. The *gonorrhœal*, characterised by a superficial ulcer, destitute of induration, and of elevated and retorted edges. The virus of gonorrhœa, he also alleges, occasions severe excoriations of the prepuce and glands. What, however, is very peculiar in his notions on this point, is, that while he insists on the total difference in the nature of the two diseases, he unhesitatingly avers, that gonorrhœa is sometimes followed by constitutional affections analogous to those of lues, such as nodes, pains in the limbs, cutaneous eruptions, which, however, instead of being *scaly* as in syphilis, are *papular*.

The *third poison* is characterised by a primary sloughing ulcer, which is often phagedenic from the commencement, and is followed by a pustulous eruption, and a train of constitutional affections.*

* Mr. Carmichael does not seem exactly to understand either the nature or source of the poison, which produces this third species of disease. My own impression is, that it is derived from the morbid secretions, which I have already noticed. These will undoubtedly occasion such ulcerations as I have frequently observed myself, and which, as he has already stated, are described by the writers of antiquity.

Depraved secretions, however, are not confined to the genitals of the male. The vagina is very apt to take on diseased action, and to throw out virulent and corrosive discharges, which very seriously affect the male organs. I know an individual whose wife has for some years had a species of leucorrhœa, with whom he can never have connection, with-

In each of the preceding syphiloid, or imitative diseases, Mr. Carmichael, excluding entirely mercury from the general treatment, trusts the cure chiefly to antimony, sarsaparilla, and its kindred articles. The local applications he employs are, lotions of the muriate or submuriate of mercury in lime water, a grain of the former, or ten of the latter,* being added to the ounce. As a wash, the compound spirit of lavender, alone or diluted, is also a favourite remedy.

Differing as we may, as to the degree of confidence to be attached to the opinions, every one must be pleased with the new views which have been presented of a very complicated subject, and, perhaps, without indulging an improper enthusiasm, we are warranted in anticipating the most interesting results, by pursuing the same track of observation and inquiry.

As respects the management of real syphilis, my own experience, which is by no means circumscribed, has satisfied me that, though on the whole,

out inducing a most inflammatory gonorrhœa, often attended by excoriation, and considerable ulcerations. Lately I had him under my care, when, to other symptoms, was added, a very frightful phymosis, and, on the subsidence of the tumefaction, I discovered on the crown of the glans penis, a deep phagedenic ulcer, which, before it could be arrested, did immense mischief to the parts. Nor is this, by any means, the only case of the sort which I have seen, though never to the same extent.

* I generally add a drachm to the ounce, and find it much more effectual.

mercury is to be preferred to all other remedies, we most wantonly and unnecessarily push the use of it. In ordinary attacks of the disease, I know that a very moderate salivation will suffice, and it will always be more effectual under such circumstances, to induce it gradually, than suddenly to change the state of the system, by the profuse use of mercury. The local affections may be cured by a steady perseverance in the topical applications, without at all recurring to the constitutional treatment. Never have I found it necessary, in the early stage of chancre, to prescribe mercury. Between its first appearance and the extension of it to the inguinal glands, always several days, and even months will intervene. During this interval, we may safely trust to the topical remedies. Believing indeed, that the constitutional symptoms proceed entirely from sympathy with the primary affection, and that, in no instance, is the virus absorbed, I have often confided in this plan, even after buboes had taken place, and have, in succession, healed the chancre, and dispersed the buboe. Consulted in the incipient stage of the disease, I endeavoured, at once, to destroy the chancre, and so effectually, as to preclude the possibility of the general system becoming implicated. This may be done by the proper application of an escharotic, such as burnt allum, which converts the syphilitic ulcer into a common healthy sore, and which, when judiciously treated, very speedily heals.

My practice in this case, is, indeed, precisely similar to that adopted in the bites of rabid animals. By the timely interposition of the knife and caustic, we almost invariably prevent canine madness, and I am sure, that there is not less certainty in the syphilitic cases. The fact is, that all diseases, propagated by inoculation, or in other words, by the introduction of a virus under the skin, are so entirely sympathetic, that if the primary irritation be arrested or changed, we also arrest, modify, or completely change the character of the constitutional affection.

By some recent publications,* it appears, that the practice of treating syphilis in all its stages, without mercury, has been adopted, pretty generally, in Great Britain, and more particularly by the surgeons of the army. To this course they were probably led by having witnessed its efficacy in Portugal, where it seems to be almost universally pursued. Chancre they manage by very lenient dressings, and the constitutional affections, with a decoction of sarsaparilla and similar articles.

Even with this defective treatment of the primary ulcer, the proportion of cases in which secondary symptoms take place, is very small, and these are speedily and effectually cured, no re-

* These are from Professor Thompson of Edinburgh, and Messrs. Rose and Guthrie, two eminent army surgeons.

lapse occurring in any instance. The occasional failure of this plan to arrest the disease, does not, as an objection, apply to mine. It will be perceived, that my proposition goes to the extirpation of the local affection at once, and where this is properly done, it must necessarily afford a perfect security against any constitutional attack. That the means I have suggested are adequate to this end, an experience of more than twelve years, and in many hundred cases, fully warrants me in asserting.

Allowing, however, that this expedient occasionally fails, and the system becomes affected, where is the increased evil or mischief? Let the patient in other words return to me after a few weeks, with an ulcerated throat, and other symptoms of confirmed lues, what happens? Entertaining, as I do, the conviction of the superiority of the mercurial treatment, I should instantly commence it, and with the certainty of effecting a cure as promptly, and with as little inconvenience, as if it had originally been employed. As, therefore, no more mercury is required to eradicate, than to prevent the complaint, there cannot be a comparison between the two modes of practice in these cases.

But, I am prepared to go further, and to avow my total want of confidence in the powers of mercury to cure chancre or hinder the contamination of the system. My reason for thinking so is, that

I have several times seen a chancre take place, and extend its ravages as usual, though at the time, the individual was fully under the impression of mercury. Cases of this nature are by no means rare in the public institutions of great cities. Thus, we see patients, while in a deep salivation for dropsy, hepatitis, consumption, or some other complaint, contract chancre, followed by buboes, &c. Whether the disease, if not checked, would further extend itself, my experience does not allow me to say. The fact seems to me, that chancre, which is a mere local injury, is so seated on the confines of the system, that it cannot be approached, or is very slowly so, by general remedies, and must be managed with direct applications. No more, in my opinion, can we cure a chancre by mercury exhibited internally, than suspend the career of the vaccine or variolous pustule, or disperse a paronychia, or heal any minute and ordinary sore.

As respects the nature of the remedies, I have nothing peculiar to offer in chancre. Like every other sore, the virus being first destroyed, it is to be treated according to circumstances. I may, however, remark generally, that all ulcers of the penis, whether of the glans or prepuce, are disposed to take on a lax and phagedenic character more or less, and hence call for stimulating dressings. Lotions will sometimes answer much better than cinctments.

The vulgar notion, so widely prevalent, that in lues venerea, the whole system is saturated with a virus, which must be either corrected, or eliminated by mercury, has led to its most profuse use in such cases, and the consequence of this preposterous practice is, that a state of things, properly enough denominated the mercurial disease, is brought on, not less horrible than syphilis itself, and infinitely more unmanageable.

In my opinion, it may be laid down as a rule, that in a very large majority of cases of what are called the secondary forms of lues, we have alone to encounter the effects of the abuse of mercury.

Even in genuine syphilis, in its advanced stages, much less mercury is required than is commonly prescribed. My practice here, is to keep up a slight salivation, excited by the medicine very gradually introduced into the system, for two, three, or four weeks, regulating the period exactly as I perceive the patient to be affected. If his condition be improved by it, we should proceed, but where the contrary happens, and he becomes worse, we are to conclude that the course is wrong, and immediately to abandon it. It is now upwards of twelve years, since I openly promulgated the preceding opinions and modes of practice, and though sanctioned, or at least some of them, by European authority of the highest character, they have been commonly considered among

us heretical and unfounded. But a different fate now awaits them. Even by many of those who formerly denounced them, most loudly, their truth is at length perceived, and fully recognized.

With this I close what I have to say relative to the application of mercury in the cure of diseases. It would have been easy for me to have expatiated much more fully on this subject. But I have stated its more material uses, and sufficiently pointed out the principles which regulate the general employment of the medicine.

As formerly mentioned, there is scarcely one disease in which mercury may not, under certain circumstances, be advantageously exhibited. It was a maxim of a practitioner,* once of great distinction in this city, that in all cases where other forms of treatment fail, we should revert to mercury as a *dernier alternative*. By pursuing this course he acquired immense celebrity for the number and variety of his extraordinary cures, and did more than any one else, to elevate the medicine to its present conspicuous rank in the *materia medica* of this country.

But eminently beneficial as mercury is upon the whole, it sometimes, either by improper use, or from idiosyncracy of constitution, or other causes, is productive of effects, of so serious a nature, as to require the best exertions of our skill. It is not

* Dr. Thomas Bond.

to be expected, that I am here to deliver any detailed account of the mercurial affections. Enough, perhaps, it will be for me to state, that there is hardly one form or symptom of syphilis, either in its primary or secondary stages, which these will not so closely imitate, as to perplex and confound the judgment even of the most enlightened and experienced.

By referring to the writers who have lately treated this subject, and especially, to Mathias, Alley, Crampton, Pearson, Abernethy, and Carmichael, it will be seen that mercurial chancres and buboes are very common occurrences, and also ulcerations of the throat, together with all the complaints seated in the periosteum, tendons, cartilages, ligaments, fasciæ, &c.

Eruptions of a very unpleasant character are also the consequence of mercurial impressions. These of late have attracted attention, and not a little has been written concerning their nature and appearance. By one of the ablest authorities, they are denominated hydrargyria,* from the source of the disease, and as they assume different degrees of malignity, he has, for the sake of perspicuity, divided them accordingly. The cure of all these affections consists, not as is usually practised, in a repetition of the mercury. Every preparation of the sort is, on the contrary, to be proscribed, and

* Alley, and by Pearson, *Eczema Mercuriale*.

we are to substitute a diet generous and nourishing, with whatever else has a tendency to cheer the mind and corroborate the body.

To the preceding diseases, I may add, as more ordinary effects, inflammation, ulceration, and sometimes even gangrene of the mouth and fauces. The discovery of a remedy, or plan of treatment, calculated to check this inordinate operation of mercury, has long been desiderated. Much has hitherto been confided in active purging, under these circumstances, and particularly with sulphur. My impression, however, derived from pretty ample experience, is, that it is productive of no advantage, and I am not certain that it does not increase the mischief. Cases, at least, have come under my observation, where the mercurial action was completely developed, which had laid dormant in the system, and, by the continuance of the purging, was carried to a very great height. Even in minute doses, with a view to its alterative effect, I have never witnessed any benefit from sulphur. The only constitutional remedy from which I have derived the least advantage, is the free exhibition of opium. This not only relieves the pain and irritation incident to the case, but also restrains the discharge and other symptoms, by counteracting the mercurial action.

Co-operating with this general remedy, we have some local applications which are useful, and of these, by far the most effectual are blisters to the

throat. Being, however, themselves painful and unpleasant, they are only adapted to extreme cases. Gargles and washes, of every variety, are much prescribed, and perhaps may sometimes be used beneficially. They are mostly astringent, such as an infusion of bark, of galls, of sage, or lime water, the solution of borax, the diluted mineral acids, &c. But the neatest of these lotions, is a strong decoction of green tea, sweetened with honey, and the most efficacious, the solution of sugar of lead. The latter, however, will not answer in genteel practice, as it stains the teeth for some time, of a dark colour.

Distrusting the powers of all these remedies, Mr. Pearson has adopted a mode of practice which is somewhat peculiar. It is recommended by him that the patient lay aside the ordinary coverings of the face, and expose himself freely to a cool, though *a perfectly dry* air, and in the country if possible. Of the utility and safety of this practice, I entertain no doubt, having often adopted it myself with advantage.

Now and then, owing to some unintelligible cause, mercury operates as a poison, producing effects totally different from its ordinary agency as a remedy, and which seem not at all influenced by the quantity taken, or the severity of the ptyalism. The mode in which it displays this deleterious operation is not uniform. But it most generally appears in the shape of what has been denomi-

nated by Mr. Pearson, erethismus. As in most instances of poison, there is here a very sudden, and sometimes unexpected prostration of strength, attended by anxiety about the præcordia, irregular action of the heart, a small quick pulse, occasional vomiting, nervous tremors, a pale contracted countenance, a sense of coldness, &c. In this state, a very slight exertion, such as attempting to walk, or rise from bed, will instantly prove fatal. The treatment of this case, is to intermit the mercury, which, if it could be continued, would be useless, to give cordials, such as volatile alkali, a free ventilation, and when practicable, an entire change of air. After a time, in such cases, we may again recur to the remedy, and with the ordinary advantage.

DISCOURSE XLIV.

The subject continued.

To complete the consideration of mercury, it remains for me only to say something of its natural and pharmaceutical history.

Mercury is a metal which is found imbedded in the earth, in many parts of the world, sometimes procured in perfect purity, and is then called virgin mercury. But, most commonly, it is discovered in a state of mixture, or combination with extraneous substances, from which it is separated by chemical processes. It is now universally admitted, that mercury in its native or metallic state, has no medicinal powers independently of its ponderosity, and hence it is no longer employed. To fit it for our purposes, it is variously modified by chemical and pharmaceutical treatment, and, when thus changed, it becomes, confessedly, one of the most active, and, at the same time, extensively useful articles in the whole compass of the *materia medica*. The processes by which these conversions are accomplished, may perhaps be reduced to oxidation, in different degrees, and a union with acids, constituting the mercurial salts.

By long continued trituration with saccharine,

mucilaginous, oily, or cretaceous substances, the particles of mercury are minutely divided, and become slightly oxidised, by having their surfaces repeatedly brought into contact with the atmosphere. These preparations are among the most mild and efficacious, and are much less apt to induce the morbid effects of the metal. They are numerous, though, as the whole agree in the leading and material properties, I shall only notice such as are in use in the present reformed state of practice.

PILULÆ HYDRARGYRI.

The blue pill is made by triturating quicksilver with the conserve of roses, or any mucilaginous matter, till the globules are entirely extinguished. The formulæ of the several pharmacopias are not precisely the same, which is to be regretted, as it leads to uncertainty in our prescriptions. Generally, I direct that the pills shall be so prepared, as each to contain about two grains of the metal, one of which may be given morning and night, or oftener in certain cases. This is undoubtedly among the mildest of all the mercurial combinations, and is, by no means, destitute of activity. In equal doses, it will excite salivation nearly as soon, and as effectually as calomel, and is infinitely less harsh in its operation.

Being not at all disposed to purge, when exhi-

bited in small portions, it is in debilitated, or irritable bowels, peculiarly useful. It is, under such circumstances, greatly to be preferred either to calomel alone, or in combination with opium. There is, indeed, no indication which can be fulfilled by mercury, the purgative effect excepted, to which this preparation is not adequate. The blue pill, is accordingly much prescribed in all cases where salivation is demanded, and more especially in the several states of syphilis.

UNGENTUM HYDRARGYRI.

Of this there are two kinds, the weaker and the stronger. The first is made by rubbing together one part of mercury and suet each, and three parts of lard, till the globules entirely disappear. The second is prepared precisely as the first, only it contains an equal proportion of the ingredients. But I have sometimes directed it of double this strength.

As the manufacture of the mercurial ointment, agreeably to the preceding formula, is a tedious and operose undertaking, various substances have been added in order to facilitate the process. But most of these are inadmissible, as they affect, in some way, the excellence of the ointment. The spirits of turpentine, which is most generally resorted to for this purpose, renders the ointment

irritating to the skin, and sulphur, which is also used, is supposed, and perhaps correctly, to diminish the powers of the mercury. With the same view, rancid oil has been proposed, and perhaps may be adopted without detriment to the ointment. But nothing answers so effectually as a small pittance of rhubarb. It very speedily extinguishes the mercurial globules, and I believe does not impair the energies of the ointment.

In union with unctuous matter, mercury exists partly in a state of extreme mechanical division, partly oxidated, and partly, as some have recently conjectured, united with sebatic acid. The oxidation of the metal, was long doubted, and indeed, even entirely denied by many. But it is now ascertained that this process takes place, and it seems highly probable, that the efficacy of the ointment is in some degree owing to this circumstance. It has also been alleged, and with sufficient plausibility, that the portion of sebatic acid formed in animal fat, when exposed to the air, may combine with this oxide, and the improvement of the ointment by keeping, a fact long known, is perhaps owing to the gradual formation of this sebate of mercury. Among the advantages of these preparations, they afford two modes by which mercury may be introduced into the system. As an enema, or injection, the ointment is sometimes, in great emergencies, employed, one or two drachms of the strongest kind, being intimately blended with a

small portion of mucilage, and in this way all the ordinary effects of mercury can be produced.

The ointment, however, is much more commonly applied by friction to the inner side of the thighs. Two or three drachms of it are rubbed in every night and morning, in ordinary cases. But where the immediate and full impression of the remedy is called for, the frictions must be extended more or less over the whole surface, and particularly to the axillæ, and other porous portions of the body. The effect may still further be promoted by the wearing of socks filled with the ointment, or flannel drawers coated with the same, or by wrapping the patient in blankets done in a similar manner.

Of course, the cases must be of the most alarming nature to justify such treatment, as mercury so profusely applied, might bring on a condition of the system, which, if it did not suddenly terminate life, would at least, render it most deplorably wretched. But such cases do occur, as the last stages of malignant fever, or hydrocephalus, or tetanus, or hydrophobia, with a variety of others of the same desperate character, which might be enumerated, where this intrepid practice would be fully warranted.

The application of mercury by inunction, frequently becomes indispensable in the practice of medicine. Cases are of common occurrence, where,

owing to inability to swallow, or to peculiar irritability of the bowels, it is impossible to administer it internally. It does sometimes happen, when neither of these impediments exists, that mercury will produce no impression on the stomach. What is the condition of this viscus which prevents its operation, is not distinctly understood. But of the fact there can be little or no doubt, having often had occasion to remark it myself. Nor is it less certainly known, that under circumstances of this gastric insusceptibility to the medicine, it will frequently produce all its effects when used in the shape of friction. But how the mercury operates when thus applied, is a matter of controversy.

Till very recently, it was supposed that the mercurial particles, were taken up by the lymphatics opening under the skin, and thus conducted into the system. But this is utterly denied by all those who disbelieve in cuticular absorption. They maintain, that by the act of friction, a mercurial exhalation is made to arise which enters by the lungs, or operates on the olfactory nerves. The facts in support of each of these hypotheses are very strong, and go far to demonstrate that this effect may take place in both of these ways. It is unquestionably true, that if frictions be used with the precaution of a glove, or some other protection to the hand, that salivation very rarely happens to the person employed in the application of the oint-

ment, while the patient will experience its full effect. This is a fact, which surely it is very difficult to reconcile with any other supposition except cutaneous absorption, or, at least, to an action of some kind on the surface.

But on the other side, it is as well authenticated, that effluvia from mercurial frictions, will often produce complete salivation. I have known, in the course of my own practice, two instances, and have heard of several more, in which salivation was excited in patients placed in the same ward with those employing mercurial inunctions. It is, moreover, by no means a rare event, for persons engaged in the manufacture of the ointment to become fully salivated by the exhalation which is disengaged in the process.

Even from very moderate trituration of quicksilver, effluvia arises, which, taken into the lungs or stomach, or acting on the olfactory nerves, will occasion the amplest mercurial effect. To this purport, there is a fact of the most decided and unequivocal description related in one of the numbers of the Medical and Surgical Journal, of Edinburgh. During the late siege of Cadiz, a British ship of the line, having on board many casks of quicksilver, had upwards of five hundred of her crew profusely salivated in consequence of the casks bursting and discharging the mercury into the hold of the vessel. In this case, it appears, that the slight trituration of the quicksilver against

the lining of the ship, from the agitation of the waves, disengaged an exhalation which produced this mischief.

But, to revert to the original hypothesis, there seems nothing in the case before us to militate against the new doctrine, which denies to the skin the power of absorption, as a natural and regular function. Every one must admit, that, under certain circumstances, such an effect will take place. In one of my early discourses, I showed that it might be done in one or two ways, either by forcing the substance under the scales of the epidermis, as in the instance of frictions, or by long continued bathing, or topical fomentations, the cuticle becoming so changed in its organization, as to admit of transudation, or the insinuation of the fluid under its squamous structure, so as to come in contact with the mouths of the lymphatics situated within.

But here a question arises, how does mercury operate when thus applied. Does it act by entering the circulation, or by local impression propagated through the medium of sympathy? On a former occasion, I so fully discussed this point, that I am not disposed at present to dwell upon it. My opinions remain unchanged. It is still my most deliberate conviction, that whenever a substance is applied to a susceptible portion of the body, either internally or externally, an action is excited, which is extended to a greater or less de-

gree, according to the circumstances which I formerly indicated. There is, indeed, no other hypothesis which has the slightest foundation in fact, or that is at all consistent with the existing state of our knowledge. The ancient notion on this subject, especially, which would refer the operation of medicines to their entrance into the circulation, is perfectly gratuitous, originating at a period of darkness, and when medicine was comparatively in its infancy, and is now abandoned by every one whose intelligence has at all kept pace with the progress of our science.

DISCOURSE XLV.

The subject continued.

CONTINUING the same subject, I am now to notice, the rest of the mercurial preparations which I deem worthy of attention. These are still numerous, and some of them highly important, though most of them I have already disposed of under other heads.*

SULPHURETUM HYDRARGYRI RUBRUM.

This is the cinnabar of the shops, made by mixing crude mercury with melted sulphur, and afterwards subliming the powder. It is probably a mere sulphuret, though some chemists seem to think otherwise. Besides this, which is denominated *factitious*, there is a *natural* cinnabar, differing from it only as regards the degree of purity.

Neither of the two preparations is at all prescribed at present, as internal remedies, though they are a good deal employed in the form of fumigations. This is among the most ancient modes

* Emetics, Cathartics, Anthelmintics, Escharotics.

of affecting the system with mercury. But, owing to some circumstance, it lost its reputation, and was rejected. Of late the practice has been revived, and is occasionally resorted to in Europe. By Mr. Abernethy, whom I saw employ it with distinguished success, it is highly commended. He contends that fumigations will affect the system, when all other means have failed, and in general very speedily. Like inunctions too they are applicable to many cases, where, from irritability of the bowels, or other causes, mercury cannot be administered internally.

A bath has been invented for the more convenient and complete application of the mercurial fumes. It consists of little more than encasing the patient's body, so that the vapours as they ascend, surround it, and are prevented flying off. Thus treated, the eminent surgeon whom I have named, declares that, he never knew a case of syphilis which was not radically cured. Yet, it must not be concealed that Mr. Pearson, whose authority in every view, is not less respectable, entertains an opinion somewhat different as to the efficacy of the remedy. It is said by him, that though it will arrest very promptly the disease, and hence is useful in violent and malignant cases; its effects are not permanent. It only suspends for a time the attack, which inevitably returns in an aggravated shape. But this is a matter of such consequence in a practical light,

that I shall cite his own words. "The conclusions," says he, "which I deduce from my experiments are the following :—

"That where checking the progress of the disease suddenly is an object of great moment, where the body is covered with venereal ulcers, or where the eruptions are large and numerous, so that there scarcely remains a surface large enough to absorb the ointment, the application of the vapour of mercury will be always attended with evident advantage. But, in addition to these remarks, I think it right to subjoin, that it is extremely difficult to introduce a sufficient quantity of mercury into the animal frame, in this way, so as to secure the patient against the hazard of a relapse. I therefore consider it as a mode of treatment by no means eligible in general practice.

"The vapour of mercury, when applied to venereal ulcers, to fungi, and excrescences, is a medicament of singular efficacy, and merits the confidence of the surgeon. But little or no account should be made of the mercury which is thus received into the circulation; for we ought never, in these cases, to introduce a smaller quantity of the specific by inunction, for the purpose of securing the constitution, than if no fumigation had been employed."

It is not easy to reconcile such opposite statements. May it not, however, in some measure, be done, by supposing that the deplorable cases of

lues, which came under the care of Mr. Pearson, in Lock Hospital, the chief source whence his experience is derived, required for their entire cure, more mercury than can be introduced through this medium? As yet, I have never had occasion to imitate this practice, nor do I know that it has been done in this city. Confident am I, however, not less from what I saw myself, than from the character of Mr. Abernethy, that this plan of treatment is fully adequate to the extirpation of most of the cases of the venereal disease.

But, whatever difference of opinion may be entertained on this point, there can be none, I think, as to the efficacy of mercurial fumigations in certain ulcers, whether proceeding from venereal taint, or otherwise. The fauces especially, are prone to take on a state of ulceration, which will continue, in some instances, for a succession of years, pertinaciously resisting the ordinary remedies. Two or three such cases I have met with, which very readily submitted to mercurial fumigations. The same species of ulceration is still more frequently to be found on the prepuce, or glans penis, or the labia pudendi, or surround the anus, and which is managed with not less success.

HYDRARGYRUS MURIATUS CORROSIVUS.

Corrosive sublimate, or oxymuriate of mercury, is composed of the metal highly oxidated, and combined with a large proportion of muriatic acid.

This is the most powerful of all the mercurial preparations. The dose cannot safely exceed a fourth of a grain, nor should more than one grain be given in the twenty-four hours. The usual dose to commence with, is one-sixth or eighth of a grain exhibited in the form of pill, or solution in water or ardent spirits. The first is the more agreeable, though perhaps the latter mode is to be preferred, as the quantity may be precisely ascertained.

Corrosive sublimate has been employed with various views. Externally, as we have already seen,* a solution of it is much used as a stimulating wash or escharotic in chancre, in sores generally of an indolent tendency, and in various cutaneous diseases. It also forms one of the best gargles in venereal sore throat, and when reduced by free dilution, is resorted to as an injection in gleet, and as a collyrium in certain cases of ophthalmia. But it is as an internal remedy, and particularly in the secondary stages of syphilis, that it displays its most active powers, and has acquired the highest reputation. No small difference of opinion however, is entertained as to the degree of its efficacy in these cases. Of those who think contemptuously of the antivenereal powers of our medicine, Mr. Pearson is by far the most conspicuous, and his ample experience gives him every claim to be heard upon the subject.

* Escharotics.

After tracing with some minuteness the progress of medical sentiment with regard to the properties of this preparation, he goes on to observe :

“ When the sublimate is given to cure the primary symptoms of syphilis, it will sometimes succeed, and more especially when it produces a considerable degree of soreness of the gums, and the common specific effects of mercury. But it will often fail of removing even a recent chancre, and where that symptom has vanished under its use, I have known a three months course of the medicine fail of securing the patient from a constitutional affection. The result of my observations is, that simple mercury, calomel, or calcined mercury, are preparations more to be confided in for the cure of primary symptoms than corrosive sublimate. The latter will often check the progress of secondary symptoms very conveniently, and I think it is peculiarly efficacious in relieving venereal pains, in healing ulcers of the throat, and in promoting the desquamation of eruptions. Yet, even in these cases, it never confers permanent benefit, as new symptoms will appear during the use of it : and on many occasions, it will fail of affording the least advantage to the patient from first to last.

I do indeed, sometimes employ this preparation in venereal cases. But it is either at the beginning of a mercurial course to bring the constitution under the influence of mercury at an early period, or during a course of inunction, with the intention

of increasing the action of simple mercury. I sometimes prescribe it also, after the conclusion of a course of frictions, to support the mercurial influence in the habit, in order to guard against the danger of relapse. But, on no occasion whatever, do I think it safe to confide in this preparation singly and uncombined, for the cure of any true venereal symptom.”*

Opposed to this great practitioner, there are many of the most distinguished names belonging to our profession. Commencing with Bazil Valentine, who seems to have been the first to prescribe it, we have a pretty regular chain of authority in support of its efficacy down to the present times. It is true, some conspicuous exceptions might be cited to the contrary.† The practitioners of the Continent have always reposed much confidence in this preparation. It is highly extolled by Van Swieten, De Haen, Boerhaave, and by numerous writers of a more modern date, of every country.

There are not wanting, indeed, some very eminent authorities, who insist that in every state of syphilis, recent or advanced, it is by far the most certain, and in every view the preferable preparation of mercury. Not however, superfluously

* Pearson on various articles of the *Materia Medica in Lues Venerea*.

† Bloomfield, formerly surgeon in chief to the Lock Hospital. The late Dr. Kuhn told me that Cullen, in his clinical lectures, also maintained that it is not effectual.

to multiply citations on this point, I shall be content with referring to the remarkable record which is given us by Dr. Locher, chief physician to the Venereal Hospital at Vienna. It is stated by him, that from the year 1754 to 1762, he cured not less than four thousand and eighty persons of lues venerea in its different forms, by the corrosive sublimate alone, and without inducing salivation, or any unpleasant constitutional effects.

To arrive at a satisfactory conclusion where the evidence is so contradictory, cannot be easily done. Directed by my own experience in this case, I now always treat syphilis in its primary form by calomel, or the blue pill, and by inunctions, using corrosive sublimate only in the secondary stages of the disease. Whether this course be right or wrong, I believe it is the one pursued by most of the best practitioners, of this country and of Europe.

In dismissing this article, I have only further to mention, that it has been applied in a new way to the cure of gonorrhœa, by Mr. Addington, a surgeon of good repute, in London. Three grains of corrosive sublimate, in an ounce of the spirits of wine, are dissolved, of which one half is to be taken on going to bed. The immediate effect is a very profuse salivation, which continues for an hour or little more. But, during even this short period, the patient will spit several pints. The succeeding day a dose of salts is prescribed, and at night, the residue of the mercurial mixture. The

next morning salts again, and then the cure is completed. Of this very singular practice, I know nothing myself, and at present can hardly recommend it to imitation. But as suggested by Darwin, might it not prove useful in hydrophobia, tetanus, &c. ?*

HYDRARGYRUS MURIATIS MITIS.

The last of the preparations of mercury which I shall notice, is calomel. It differs chemically from corrosive sublimate, merely in the metal being less highly oxidated, and in that oxid being combined with a smaller proportion of muriatic acid. This preparation therefore, is a submuriate of mercury.

To what I have already said, under various heads, upon this subject, I can add little. Calomel, as is well known, is incomparably the most valuable of the mercurial medicines, and is susceptible of the widest application in the practice of our profession. I shall just state, that when used as a salivant it is given in doses of one or two grains

* *Incompatible substances.* Alkalies, and alkaline earths, tartrate of potash, and antimony—superacetate of lead—sulphur—sulphuret of potash—and soaps—iron—lead—copper—and bismuth, in their metallic state decompose it. The following vegetable infusions also produce precipitates, viz. The infusions and decoctions of chamomile flowers, horse radish root—columbo root, catechu,—cinchona bark, rhubarb—senna—simarouba bark, and oak bark.

in pills several times in the day, and if it purges, opium should be combined with it.*

It will be perceived from the preceding inquiry, that there are at least four modes by which the system may be put under the mercurial impression, of each of which I have treated, and also of the appropriate preparations for the purpose. But it sometimes happens, owing to peculiarity of condition, that there is a total insusceptibility to the action of the medicine, and in spite of all our efforts, salivation cannot be induced. It is in highly excited states of the system, that we most commonly meet with this resistance to the remedy, and especially where much fever prevails. The actions of the two are incompatible, and that of the disease must be subdued before the remedial one can take place, with which view, all the depletory measures are to be called into requisition.

Now and then, however, we are equally frustrated in our attempts to salivate under different circumstances, or in cases, at least, in which there is no uncommon arterial vigour or general excitements. Copious purging, I have found here, almost in-

* *Incompatible substances.* Alkalies and lime water instantly turn i black. It is also decomposed by soaps, sulphurets of potass and antimony, and by iron, lead, and copper.

variably to succeed in awakening susceptibility to the remedy, so that the desired end is fully attained.

Of the modus operandi of mercury in the cure of disease, a question, once of great interest and warmly discussed, I have nothing new to say, and shall therefore dismiss the subject with one or two remarks. The well known explanation of Mr. Hunter, that its efficacy in syphilis depends on its general and permanent stimulant power, by which it induces and keeps up an action that ultimately supersédes the morbid one, may be extended, it seems to me, to all other cases. Confessedly there is no article of the *materia medica* so diffusive in its effects, which, pervading the whole system, enters into every recess, and acting on every part, leaves no morbid impression untouched. It is by virtue of this general and revolutionary action, that it is calculated to meet such a vast variety of indications, to an extent indeed, that it has come to be prescribed, as I formerly mentioned, in all cases, with one or two exceptions, where other modes of treatment have failed.

Of all the notions relating to the mode of operation of mercury, that, which alleges its entrance into the circulation, is surely the most gratuitous and absurd. Elsewhere* having stated, somewhat in detail, the leading objections to this theory of the action of remedies, I shall here

* Discourse on the Modus Operandi of Medicines.

merely observe, as an additional ground of refutation, that by the *medication* of the blood, were it possible, we must, in all instances, do more harm than good. Thus, as the whole mass of the circulating fluids is equally charged in this case with the medicinal substance, while a salutary action is going on in the diseased organ, every sound part of the system would be subjected to a similar impression, which could not fail to disturb the order of health, and induce morbid dements.

Against all this however, it is said, that mercury has actually been found in the cells of the bones, and Boerhaave is cited for the fact. It is stated by the same high authority, “*that he once saw with his own eyes, and hence could not be deceived, in the semen of a ram, the germs of the future animal, following each other exactly like a flock of sheep entering a pen.*”

Without meaning, at all, to impeach the veracity of this truly pious and illustrious man, I cannot forbear to remark, that such statements strongly remind us of the uncertainty of human testimony, where the judgment permits itself to be perverted by the ardour of fancy, or by an ambitious desire to establish preconceived notions.

DISCOURSE XLVI.

Of Tonics.

IN the widest acceptation of the term, this class of remedies is extremely extensive, since it includes every means which invigorates the powers of life. But more technically, the term is employed in a narrower sense.

By tonics, we usually understand, the medicinal substances which are exhibited to correct debility. What is the mode, in which they act, in restoring tone to the body, has never been very distinctly ascertained. To me however, it is obvious, that it cannot be, either by mechanical or chemical laws, as has sometimes been alleged.

Like that of all other articles of the *materia medica*, their operation must be regulated by principles incident to vitality alone. They are stimulants, differing only from those substances of which I have already treated, by producing greater permanency of impression.

More than once, in the progress of the discussion, relative to the *modus operandi* of medicines, I have stated, as an indisputable proposition, that a high degree of excitement, suddenly raised, is uniformly succeeded by a proportionate languor and debility. This is especially evinced in the

action of the diffusible stimulants. But, at the same time, I shewed it was equally true, that, if this excitement be slowly created, there will be no correspondent depression, even though the sustaining powers be withdrawn. It hence appears, that it is by virtue of this law alone, that tonics produce their effects.

In their action, this class of medicines exert a very wide and pervading influence over the system. Commencing their operation on the stomach, they strengthen the digestive organs, augment the force of the circulation, promote the secretions, or restrain them, when morbidly increased, impart tone to the muscular fibre, brace the nerves, and renovate generally the power and functions of the animal economy.

As regards the principle which gives the tonic power, some difference of opinion has been entertained, which scarcely now deserves to be noticed. Among other conjectures of this sort, it was supposed by Cullen, to be the same quality as that which occasions bitterness. But though it holds to a very considerable extent, there would seem to be no necessary connection in the case. Exceptions at least are numerous, as we see very strikingly in opium and digitalis, which are bitter though not tonic, and conversely, galls, and the whole of the metallic tonics, which are bitter not in the slightest degree.

While possessing, in common, the power of

overcoming exhaustion, or supporting the strength of the system, there are three sections of this great class of medicines, each of which is marked, to a certain extent, by properties peculiar and distinct. These, as usually designated, are the bitters, the aromatics, and astringents. But it is the last division alone which has any very strong claims to our attention.

Cullen has defined astringents to be "such substances as applied to the living body produce contraction, and condensation in the soft solids, and thereby increase their density, and force of cohesion."

By consulting his reasoning on this subject, it will very clearly appear that he considered astringents as acting on the living, precisely as they do upon the dead body. The operation of this class of articles he does indeed illustrate by the process of tanning or making of leather. But surely there is no sort of analogy in the two cases.

In tanning, the astringent liquor soaks through every part of the skin, and a chemical action takes place between it and the animal fibre. By this union the hide is rendered more dense and firm, putrefaction is prevented, and we have fabricated what is termed leather. But apply the same astringent to the living body, and no such changes take place. As I have repeatedly insisted, so long as vitality endures, every chemical action or com-

bination is repelled, by powers and resources peculiar to the animated condition.

Nevertheless, there would seem to be a class of articles endowed with the property of corrugating or contracting the living fibre. This is especially evinced by the sensation which they impress on the tongue and fauces, and perhaps still more conspicuously by their efficacy in restraining haemorrhages from bleeding wounds. But how astringents operate has never been very intelligibly explained. By Darwin their effects were ascribed altogether to the power of promoting absorption. Whether they have such a property is exceedingly doubtful, and even conceding it to them, it will not in the slightest degree account for their suppression of haemorrhages.

Little is the evidence, after all, which we possess of the existence of any corrugant or astringent article. The weight of the two facts which I have just mentioned as supporting the hypothesis, is very much done away by the recollection that we have many articles, such as opium, ipecacuanha, the cretaceous preparations, &c. which are productive of nearly similar effects, without exhibiting any sensible qualities of the kind.

But whatever may be the principle on which they act, the collection of remedies denominated astringents, are indisputably capable of meeting a variety of indications, and are daily employed in no small circle of diseases.

As operating slowly and permanently, they are substituted, very often, for the purer tonics in cases of debility. It is however in checking or suspending evacuations, whether of blood, or other discharges, that their powers are most signally displayed, and their superior utility fully recognized.

Of Particular Tonics.

Besides the articles of the *materia medica* properly denominated tonics, we have a variety of other means conducing to the same end, which are too important to be wholly overlooked. Of these, I shall, in the first place, very briefly treat, rather suggesting some precepts for the regulation of their employment, than indicating, in detail, the cases of disease to which they are applicable.

Among the means to which I allude to overcome debility, or to invigorate the system, is a properly regulated diet. Neglected as this commonly is, it is still confessedly of the highest importance in the practice of our profession.

1. Let the diet of the patient be always accommodated to the state of the system. After recoveries from acute diseases, it should at first, consist of the lightest vegetable matter, and, especially the farinaceous articles, such as rice, tapioca, arrow root and sago. To these may succeed eggs, oysters, game, and the white poultry, and finally, where we wish the fullest tonic effect from diet,

beef and mutton. But in making the selection, we should be influenced not a little by the palate of the person himself, since the pleasure which is received in eating is of itself no ordinary stimulus, and particularly to a very debilitated system. Nor is the influence of national habits to be overlooked. What may be very offensive to an inhabitant of one part of the world, might prove highly grateful and even salutary to another person.

2. Enjoin on the patient, whatever may be the nature of the case, to eat much more frequently than the common meals. The stomach has been pronounced, by a very sagacious observer,* to be, in one respect, like the school boy. It is always doing mischief when not employed. This short aphorism contains a vast deal of medical wisdom. By eating often, while we prevent evil, we sustain the system by a constant impression through the stomach.

3. As a general rule, solid food is to be preferred to fluids. It is usually more comfortable to the stomach, and restores strength with greater rapidity. This applies particularly to persons of plethoric tendencies, or who are subject to active inflammations.

4. No point is more cardinal and important in diet, than simplicity. This holds equally true both as regards acute and chronic diseases, and

* Sir William Temple.

there are some cases, such as the affections of the stomach, in which a restriction to a single article of food is indispensable to the cure.

Next to diet, in point of efficacy as a tonic, are the hot and cold baths. Though so different in temperature, they produce effects not very dissimilar. Each when judiciously managed, will very rapidly, in many instances, invigorate the body. The hot bath acts directly on the system as a stimulant, or tonic, increasing all its actions. But the cold bath operates differently, producing at first, languor and depression, after which however, a strong reaction takes place, and the system is powerfully invigorated. This is a sure test of its efficacy.

1. The bath is to be used in the morning or at twelve o'clock. The latter hour answers best for invalids. To be efficacious, it should be repeated daily, and without remaining in it beyond a few minutes. Continuing longer, under the influence of cold, it is apt to depress the system below the point of reaction, and to do much harm.

2. It should not be employed, when the body is debilitated, by fatigue, or is in a state of perspiration, however slight. Experiments have proved that no danger arises from the application of cold to the body, when heated, or even perspiring, provided the system be not previously exhausted. But if it be, no reaction takes place, and very serious consequences ensue.

As relates to the warm bath, most of the preceding rules are no less applicable.

Like that, it should, be used at mid-day, and repeated frequently, to produce any very great effect. But the patient is to continue in it considerably longer, and it is always to be taken in a warm room, at least, in winter. After coming out of it, he is to be rubbed thoroughly dry, and if a high degree of stimulation be desired, frictions ought to be actively applied. To contribute to the same end, certain stimulating articles may be added to the water, as salt, cayene pepper, nitric acid, &c.

As a tonic, exercise is undoubtedly among the most decisively useful, and has been divided into two kinds, *active* and *passive*. It is proper, in extreme debility, or in the first stage of convalescence from an acute disease, to begin with the second species. This consists chiefly of frictions, which may be made with the naked hand, or with a brush, either alone, or with the addition of some stimulating matter. Much more than is commonly imagined, frictions are an important remedy in the management of disease, as well as the preservation of health. Every practitioner is aware of their great utility in some of the sinking states of acute diseases, and especially when made with irritant substances. Not less so are they, in many of the chronic affections, and particularly such as are directly or indirectly connected with the alimentary canal, and in which, I include some

of the neuroses. It was the practice of Boerhaave, as I find by his "Medical Correspondence,"* to insist much on the efficacy of the remedy in all cases of this description, and experience has taught me that his advice was judicious.

Equally as a luxury, and as conducive to health, the use of frictions is interwoven with the habits of most of the oriental nations, and with the same view, has been lately adopted in Europe, and particularly by the individuals of fashionable life, who are desirous of retaining beauty of complexion, or ambitious of a general rejuvinescence.

The ordinary course pursued in this respect is to rub, at least once a day for half an hour or more, the whole body with fine dry salt, which creates a universal glow, renders the skin smooth and florid, imparts vigor to the muscles, improves appetite and the powers of digestion, and in all its tendencies is highly salutary.

Next to this simple mode of promoting the actions of the body are the cradle, and the chamber horse. The latter affords a very pleasant exercise and is much resorted to in Europe. Besides these, other contrivances have been devised for this purpose, or as an amusement for persons confined to the house, and among which, may be enumerated the shuttle cock, dumb bells, &c.

Of the external modes of taking exercise, swing-

* A work, at present too little consulted.

ing, sailing, walking, and riding, constitute the most important. The benefit of all of these, is more or less heightened by the influence of the open air. Each is more particularly suited to certain cases, and exacts some degree of discrimination in making the proper application, though of all of them, equitation is generally preferred. It is appropriate to a very large number of cases, of actual disease, and more than any other means of exercising, removes debility, whether chronic, or recently induced.

In prescribing exercise, the following instructions are to be attended to.

1. Commence with what I have called the passive exercises, in extreme debility, following acute diseases. The excitability here is so excessive, that a more powerful impression is apt to re-excite fever, and to induce a relapse.

2. Be careful of fatigue, and with this view, always direct the patient to discontinue the exercise, while he still feels an inclination to a further indulgence.

3. Never permit exercise to be taken either on a full or empty stomach, and for this reason, it is not safe for the patient, especially if he be much debilitated, to go out before breakfast.

4. Let the mode of exercise be adapted as much as possible to the seats of debility, or disease.

DISCOURSE XLVII.

Of Medicinal Tonics.

OF this class, nature has been lavish in her supplies. Two of her kingdoms at least, are exuberant in articles, possessed of such powers. I shall first treat of the vegetable and next of the mineral tonics, which, on the whole, is perhaps, the most convenient arrangement of these medicines.

As agreeing in their leading properties, most of the rules suggested as proper in the use of stimulants are scarcely less applicable to tonics, and to these I beg leave to refer. I will here only observe, that it is of great importance to adapt with precision the medicine to the particular circumstances of the case, and in paroxysmal diseases more particularly, to continue with some regularly the use of it during the whole twenty-four hours, so that the impression once made, shall sustain no great diminution.

CINCHONA OFFICINALIS.

In every view the Peruvian bark claims a priority of attention. The tree which furnishes it is a native of Peru, and, of course, could not have been known to Europe till after the discovery of

the new world. More, however, than a century subsequently elapsed before the medicinal virtues of the bark were detected, or at least fully ascertained.*

The history of the introduction of this article into the practice of physic, is not altogether uninteresting. It is related that the lady of the viceroy of Peru, whose name was *Cinchon*, was cured of an obstinate intermitting fever with it, under the direction of one of the natives of the country. The fame of this cure was soon diffused, and the remedy came into general use. To commemorate this incident, *Linnæus*, in the spirit of gallantry, conferred the title of *Cinchona* on the medicine.

The knowledge of the properties of bark, was acquired by accident originally. We are told that an Indian being ill of a fever drank freely of a pool of water, strongly impregnated with the bark from some trees having fallen into it, and was thereby relieved.

Of the natural history of the *cinchona*, not much was accurately ascertained till recently. So late indeed, as the time of *Linnæus*, only two species were known. Twelve other species have since

* It was first received in Europe in 1640, and soon after sold by the Jesuits as an important remedy. From this circumstance, it acquired the title of *Jesuit's Bark*. It, however, lost its reputation for a time, and was once more renewed by Sir Robert Talbot, who employed it with such success, that Louis 14th of France was induced to purchase the secret of the composition of his powder, called the *English powder*, at an exorbitant price.

been added. But of these, only three species, the pale, the red, and the yellow, are incorporated with the *materia medica*, the powers of the rest not being sufficiently determined. In the nomenclature of the botanists, they are denominated *cinchona lancifolia*, *cinchona cordifolia*, and *cinchona oblongifolia*.

The process of curing the bark is very simple. Being stripped from the trunk and branches of the tree, it is dried by exposure to the sun, and afterwards assorted according to the qualities of the pieces.

As it comes to us, there is a very material difference in the appearance of the three kinds of bark.

The *pale* bark, is in the form of small twisted twigs, and is covered with a rough coat of a greyish brown colour. If good, its taste is more bitter, astringent, and aromatic than perhaps the red.

The *red* bark, is in large thick pieces, usually flat, though sometimes quilled, it has a rugged brown coat externally, with a smooth one within of a dark red colour.

The *yellow* bark, is in flat pieces, not twisted like the pale, and is smooth externally. Its inner surface is of a light cinnamon colour, approaching to a yellow. In odour, it does not differ from the other species, though it is infinitely more bitter.

As a medicine, the comparative efficacy of the different species of bark is not easily determined,

owing to the variable state in which they are found in the shops. At its first introduction, the red was represented as much superior to the pale, and practitioners seemed to acquiesce in the correctness of the statement. But the very preference which, in consequence, was given to it, led to so general an adulteration of the article, that it lost much of its reputation. When obtained pure, however, there can be little doubt of its superiority.

But both of the preceding species have since, to a certain extent, been superseded by the yellow bark. Comparative experiments made some years ago, with the three species on a very large scale, in the clinical wards of one of the London Hospitals, afforded very conclusive evidence of its greater activity in the treatment of many diseases. These observations have since been confirmed by the experience of many practitioners in different parts of the world. Nevertheless, it is asserted by some respectable authorities, that its intense bitterness renders it very unpalatable, and that also, it is more apt to excite nausea, and to be either rejected by the stomach, or to run off by the bowels. My own experience with the medicine teaches me that these objections are in some degree well founded, and on the whole, when perfectly pure, I consider the red bark as preferable to the other two species.

In its action on the system, bark displays the peculiar powers of a tonic. There are few sensible effects from it, when it agrees perfectly well

with the patient. It is slow, and almost imperceptible in its operation, producing little or no alteration in the state of the pulse, or any of the functions of the animal œconomy. The power, therefore, which it possesses as a tonic, is only evinced by the gradual removal of a disease or by the restoration of strength.

In making the application of bark to the cure of diseases, I shall not, on account of its vast importance, too hastily dismiss the subject. It has already been mentioned, that this medicine was originally employed in intermittent fever, a case in which it has maintained an unrivalled reputation, amidst all the revolutions of opinion, and vicissitudes of practice, that have subsequently taken place.

Little diversity of sentiment now exists, with regard to the rules to be attended to in its administration, though formerly, nothing was more unsettled. Among the early notions on the subject, was the very absurd one, that in an intermittent, some time should be allowed to elapse before the bark is exhibited, in order that morbific matter may be thrown off by the paroxysms. This was the advice of Boerhaave, who says “*Cum morbus jam aliquo tempore duravit.*” The commentator on his aphorisms, Van Swieten, unites with him, and we see the same concurrence on the part of Sydenham, and the whole of the distinguished practitioners of that and the preceding age.

Directly the reverse of this course is now universally admitted to be the proper practice, and the fact is fully established, that the earlier we commence with bark in this disease, the more speedy and complete will be the cure. The only circumstance indeed, which warrants the slightest delay in its use, is the state of the alimentary canal, and perhaps, sometimes of the system generally. Doubts are expressed by some writers, whether there really be a necessity of preparing the system, in any way, for the exhibition of the bark, and I am acquainted with several practitioners who act on the supposition of its inutility. But this is by no means the common opinion, or the established practice. It seems now to be pretty well agreed, that though occasionally the bark may at once be used without any evacuations, still as a general principle it is hazardous to undertake the cure of the disease, on this plan. At present, it is usual to evacuate previously the alimentary canal, either by puking or purging, and with this view the emetic tartar or calomel is prescribed.

Emetics however, in very modern times, and especially in this section of the country, have in a great degree given way to mercurial purges. These undoubtedly will, generally, answer exceedingly well, though cases of an intractable nature do often present themselves, in which an emetic can hardly, if at all, be dispensed with.

They operate here, not only as evacuants, but

still more by producing impressions on the stomach, which dissever and break down those tribes of wrong or perverted associations, on which intermit- tent, and all other diseases of periodical recurrence seem to depend. Of their efficacy, under such circumstances, my own practice has supplied me with the most abundant and conclusive evidence.

But besides the evacuation of the *primæ viæ*, venesection is also sometimes demanded. Intermittent fever is always more or less inflammatory in the commencement, and which diathesis is sometimes kept up with considerable pertinacity. Without the loss of blood in these cases, the bark would probably be rejected, and consequently of no use, or if retained, could only have the effect of aggra- vating the symptoms which it was intended to remove. My rule, therefore, is never to resort to it till I have prepared the system by the several eva- cuations, so that, it may receive beneficially the impressions of this invaluable medicine. By pur- sning this course, carefully adapting it to the state of the system, I am persuaded that the bark will display such a certainty of effect, that it would al- most be entitled again to be considered as it former- ly was, a specific in intermittents.

'This species of fever is not unfrequently associat- ed with visceral obstruction, and where this exists, the bark has been held inadmissible. "That there may be cases of this kind, says Cullen, to forbid the exhibition of bark, I have not sufficient experience

to determine. But, I am well persuaded, that it would be very dangerous to admit of any general rule on this subject. I am convinced, continues he, that it is in the cold stages of fever, that accumulations of blood are formed in the liver and spleen: that such accumulations are increased by every repetition of the cold stage, and consequently by the repetition of paroxysms, and I am therefore clearly of opinion that even considerable obstructions of the viscera, if without inflammation, ought not to prevent the exhibition of the bark in such quantity as may prevent the returns of the paroxysms. The question has several times occurred to me, in the case of persons who, having frequently laboured under intermittents, had tumours and indurations remaining in the hypochondriac, and had, when in that condition, a return of the intermittent fever. In such cases, I have freely employed the bark, and never found it to increase the affection of the liver or spleen: and in other such cases, I have constantly found that the avoiding the bark, and admitting therefore, the repetition of the paroxysms, brought on disorders which often proved fatal."

The practice on this point may, in my opinion, be very easily adjusted.

In cases of visceral obstruction, where no inflammatory action existed, I have never hesitated, even for a moment, to employ the bark, so as to put an end to the intermittent fever. But under different circumstances, or, in other words, where

there was pain in the obstructed viscera, accompanied by some activity of pulse, I have uniformly found the bark so far from doing good, to be unequivocally mischievous. The treatment here, is to resort to venesection, blisters, and sometimes to a slight salivation, which will most commonly cure both complaints.

At one time it was much debated, whether the bark should be given immediately preceding the paroxysm. Cullen is decidedly in favour of the practice. Determining, however, from what I have observed myself, I cannot hesitate to pronounce him wrong. Exhibited at the moment of the expected attack I have found, that, instead of preventing, it aggravated it, greatly increasing the fever and distressing the stomach. But there are some writers who have gone so far as to contend that no remission should be allowed in its use, and recommend its continuance in every stage of the paroxysm. As yet, I have not been induced to make the experiment, having perceived, that a dose of bark, while the slightest degree of fever existed, never failed to be productive of mischief.

In the cure of fevers of this kind the common mode is to give an ounce of bark, in divided doses, of a drachm, or more, in the course of twenty-four hours. But in the West Indian islands, I am told, the practice is to direct an ounce of the bark, to be taken at a dose, early in the morning, and to withhold the further use of it altogether for that day.

There is a gentleman of this city, who I know adopts this plan, and has experienced from it complete success. Nevertheless, I have my doubts whether it could be generally followed, as few stomachs, I suspect, would bear such a dose. The fact however is interesting, and should not be neglected, as cases may occur in which it might be beneficially applied.

But in some persons, such is the irritability of the stomach, that bark in substance cannot be retained even in the most minute dose. This being the case, we resort to the medicine either in decoction prepared by itself, or in union with some aromatic, as cloves, cinnamon, orange peel, or Virginia snake root. The last of these articles I think, is to be preferred, since it renders the mixture quite as pleasant to the taste, is as comfortable to the stomach, and decidedly more efficacious. Combinations too, of this sort will frequently cure intermittents, when the bark alone has failed, and are particularly adapted to children, and delicate women.

Cinchona is hardly less employed, in remittent than intermittent fever, and sometimes with success. This might have been anticipated, as they appear to be essentially the same disease, arising from similarity of cause, prevailing at the same season, and mutually exchanging character in many instances, in their progress. But at one time, the bark was peremptorily forbid in these cases, under

the supposition that the remission is never sufficiently complete. To the celebrated Morton the credit is ascribed of overcoming this prejudice, and for having fully established the utility of bark. Yet whatever may be the propriety of the practice in some of the countries of Europe, it is among us to be received with much caution, and discrimination. Remittent fever in the United States, or at least in those parts with which I am conversant, is generally a bilious disease, more or less inflammatory, which in its commencement requires venesection, and throughout all its subsequent stages is best managed by evacuations of the alimentary canal, and by mild diaphoretics. Cases, however, do undoubtedly occur, and more especially in those districts of country greatly exposed to marsh exhalations, and where the intermittent is the dominant type, which demand the use of the bark. It generally happens here, that the inflammatory diathesis is less, the remission longer, and more distinct, and the case, in all its features, partakes in a greater degree of the mild intermittent character. Yet, even under such circumstances, I have remarked, that bark could only be sparingly used, and when conjoined with the serpentaria it answered better.

In several forms of continued fever bark is occasionally employed. Cullen informs us that "when intermittent fevers have changed into remittents, and these have become continued, or when either this transition has been manifestly perceived, or

that, from the place of the patient's habitation, from the season of the year, and from the nature of the prevailing epidemic, there is reason to conclude that a fever has arisen from the same marsh effluvia which produce intermittent or remittent fevers, we may consider it as essentially of the intermittent nature, and treat it accordingly." This advice, if applied to the fevers of our country, would prove highly mischievous. The case described, is precisely our continued, bilious, inflammatory autumnal fever, which I have already shewn, even in the instances characterized by remission, is rarely susceptible of the use of the bark. I believe that the only continued fever, to which our medicine is well adapted, is typhus. This disease, by which I mean the typhus gravior and mitior, of the nosologists, has hitherto been held by most writers to have its origin exclusively in human effluvia or contagion. That this is generally true, and always so, when it breaks out in ships, hospitals, jails, or other crowded places, cannot be denied. But it is equally demonstrable, that it sometimes proceeds from marsh exhalations, and especially in the United States. Notwithstanding, its different modes of production, typhus fever seems nearly always in its primary stages to be either congestive or inflammatory, and hence stimulants as well as tonics are precluded. Yet there is a point in the progress of these fevers, which is to be learnt by attention to the pulse, and other circumstances, at

which the bark may be introduced with advantage. This is neither in the commencement, nor at the close of the case. As long as the pulse is excited, the skin hot, the tongue parched, the eye wild, the head affected, our medicine is inadmissible, and not less so when subultus tendinum, low delirium, and other indications of great exhaustion, supervene. The symptoms of the first stage, are most effectually removed by venesection, purging, cold ablutions, or mild relaxing diaphoretics: and those of the final stage, by opium, wine, volatile alkali, and blisters. Between these opposite extremes, there is a point, at which the disease betrays some tendency to give way, or remit, and particularly if it has been occasioned by marsh effluvia, when the bark alone, or what I am sure is better, with the serpentaria. and, perhaps, wine, may be employed very beneficially.

DISCOURSE XLVIII.

The subject continued.

No little difference of opinion prevails as to the propriety of bark in some of the phlegmasiae, and rheumatism is one of these cases. As this is a disease, in the acute stages, highly inflammatory, I cannot conceive that bark can be used without very great harm, though the subject is viewed in a different light by some of the English writers. As the result of an extensive experience with the remedy, we are told by Haygarth "that bark, in the rheumatic affections, is only inferior to mercury in syphilis." After evacuating the alimentary canal, by the antimonial preparations, he begins with it in the small doses of twenty, thirty, or forty grains, repeated every two or three hours. Bleeding he altogether condemns, as having a tendency to render the disease chronic, and to protract the cure. To the same effect, we have several concurrent authorities, and among these are the equally celebrated names of Fothergill and Saunders, though neither they, nor any one else, go to the same extent, as I have mentioned, in praise of it.

Condemning, as I do, this practice in the early period of the disease, I am still inclined to suspect,

that there are certain cases or states of it, to which the bark is not inapplicable. It is well remarked by Cullen, that in many instances, after copious depletion rheumatism loses the phlogistic diathesis, becomes remittent, and in a considerable degree a periodical disease. The bark, in such cases, he says, is an important medicine, though it requires some caution, as it will occasionally bring back the exacerbations to such a height, as again to demand direct depletion.

There is, however, a case of rheumatism, in which the bark appears to be a much less ambiguous remedy. Being generated in low and marshy districts, the disease sometimes puts on distinctly the remittent, or intermittent character, and as in such situations the system is commonly emaciated and reduced, our medicine may at once be resorted to. Examples of this sort have come under my care very often in the Alms House, and the bark has been found indispensable, either as the principal or auxiliary means, in the treatment.

In the arthritic affections, our medicine has been too much extolled, to be overlooked, though I confess that my confidence in its powers are slender. It was a favourite remedy with Sydenham, who urges its long continuance, and by Gregory it is also commended. There is a late writer, who denominates it a "divine remedy." The cases, however, have not been very precisely pointed out, to which it is appropriate. But it

seems to me to be suited best, and perhaps only, to the disease when occurring in an infiebled state of the general system, and of the stomach especially. To this rule there is one exception. Contracted by exposure to the causes of intermittent, gout, is sometimes associated with that disease, or at least, assumes its guise, and can only be managed, under such circumstances, by evacuations of the alimentary canal and by bark, of the truth of which I have the most irrefragable evidence.

Of the use of bark in the exanthematous affection, not a great deal need be said.

As the consequence of an opinion which was once entertained, that it promotes the suppurative process, it was not a little trusted to in the eruptive fever of small pox. But the practice is no longer continued, it being now an object, as much as possible, to check fever, and to lessen the eruption. Cases however may occur, where from debility of the vital powers, the pustules never appear, or if they do, imperfectly, and become confluent, in which the bark may be advantageously prescribed.

Measles, which almost constantly prevail in some one of our large cities, are a disease always of an inflammatory nature. It is by no means rare to bleed even children, several times in the early stages of an attack, pursuing the whole antiphlogistic plan at the same time, to the fullest extent. The bark, of course, under these circumstances, is inadmissible. But, in some of the sub-

sequent stages of the disease, after the more active symptoms have been removed, there is occasionally, it is said, a lingering obscure fever, more or less of the intermittent or remittent type, to which our medicine has been thought well adapted. No such a case, however, have I seen. To the putrid or typhoid measles, as described by Watson, I should suppose the bark much more appropriate.

As regards erysipelas, the case is much the same. The disease, as it appears among us, is almost invariably marked by an inflammatory dia-thesis, and is only to be managed by emetics in the first instance, and afterwards, if it prove intractable, by bleeding, purging, and blistering. But elsewhere, it has certainly assumed a different character. It is a curions fact, that the English and Scotch writers describe erysipelas, in the most opposite terms. By the former it is represented as a very feeble state of disease, and by the latter, as purely inflammatory, and their practice is regulated accordingly. The bark is strongly recommended by the English authorities, and we are told especially by Fordyce, that a drachm of the powder, given every hour, is the most effectual of all remedies. I have already remarked upon the character of the disease, as it appears in this country. There are, however, some exceptions.

Erysipelas is often the effect, or concomitant of the depraved habits of the vicious and the drunken.

In my attendance on the Alms House, I have occasionally met with instances of this sort, among the victims of intemperance, which abound in that institution, and have learnt that the tonic and stimulant remedies are alone calculated to afford relief.

Of the use of bark, in scarlatina, I have little to say, not having any experience with it in the disease. It is observed by Cullen, that in the species of scarlatina, properly called anginosa, there are cases exactly the same as *cynanche maligna*, in which the bark is the chief remedy. But, continues he, "I maintain, that there is a scarlatina anginosa, in which the bark is superfluous, and has been often hurtful."

This is undoubtedly true. Each of these affections may be connected, either with a highly excited, or reduced condition of the system, and a judicious practitioner will adapt his remedies accordingly. But in this country the inflammatory form of the disease is by far the most predominant, and sometimes demands pretty copious depletion.

Dyspepsia is one of the complaints of the alimentary canal, in which bark has been much employed. Cases of it are conceivable, in which the medicine might be useful, though in all my trials with it, I confess that I have been disappointed. Dyspepsia, from an obstructed state of the chylopoietic viscera, certainly would not be, at all, benefited by it, and even in the cases dependant on mere debility of the stomach, to which it would seem

most appropriate, I have not found it to do well, rather oppressing than invigorating that viscous, and sometimes exciting nausea and much gastric distress.

Not less scarcely, has it been commended in dysentery. This disease is very improperly placed among the profluvia. As regards our own country, at least, it is a genuine phlegmasia, consisting of fever, with local inflammatory determinations. Being uniformly of this nature in the beginning, the bark, of course, is inapplicable. But in the advanced state, says a great practical writer, "when some symptoms of putrescence appear, or when the disease has changed in some measure into a diarrhoea, the bark may possibly be resorted to with advantage." My own observations, however, teach me differently, and I cannot indeed, conceive a case of true, unmixed dysentery, in which our medicine in any stage, or under any circumstances, could be demanded. But the disease occasionally presents itself in the shape of an intermittent, and whenever it does, the bark according to some becomes indispensable to its cure. To resort to our medicine in this case is no new practice. It was so prescribed by Morton, the contemporary and rival of Sydenham, who has since been imitated by Cleghorn, and many other practitioners. The bark here is directed to be given in the interval of the febrile paroxysm, and some-

times with opium. To what I have already said of this practice, I beg leave to refer.*

The bark is greatly prescribed in hæmorrhage, though not always with sufficient discrimination.

In the active form of the disease, there can be no doubt of the total inadmissibility of the medicine. Of this description are the bleedings of the lungs more particularly. But even here, it has been directed, though mischievously. Cases however of hæmorrhages do exist, in which the bark is indisputably serviceable. Not to mention such as are incident to low fevers or scurvy, it is admirably suited to the cases of menorrhagia, produced by extreme laxity of the uterine vessels. Combined with the carbonate of iron, it answers exceedingly well, or what perhaps is still more efficacious, it may be infused in lime water, in the proportion of two ounces to the quart, and then digested for a few days.

Next in order come to be considered the nervous and spasmodyc affections. There is hardly one of these cases in which the bark is not habitually employed, though it is in epilepsy that it has acquired the greatest reputation. This extraordinary affection proceeds from such a variety of causes, and consequently presents such a diversity of character, that no one system of treatment can be applied to the whole of the cases. On more

* Cathartics.

than one occasion, I have insisted on the superior efficacy of the depleting plan, by evacuations of the alimentary canal, and occasional bleedings, to every other which has hitherto been devised. But after the end is accomplished, for which these remedies are employed, the bark, and other tonics, are indispensably necessary, in some instances, to the confirmation of the cure.

Cullen, who expresses no great confidence in the bark in epilepsy, seems to entertain a very high idea of its powers in chorea. Treating of this disease, he says, "there is one convulsive disorder, in which I have found the bark remarkably useful." He seems indeed to have preferred it to all other remedies. The reports of such a writer, who is so conspicuous for his scepticism as to the virtues of medicines, are entitled to much respect. But let us not on this account too hastily repose confidence in its powers. Whatever they may be, there is hardly one case of chorea, in which the use of bark ought not to be preceded by a persevering course of opposite measures. This is a disease, which, in its early stages, emphatically calls for depletion. Even active purging will not always suffice, and repeated venesection becomes necessary. Like its kindred affections, it is distinguished by obstinate constipation of the bowels, and a plethoric state of the head.

As a remedy in tetanus, I know nothing of the bark. It was used by the late Dr. Rush in this

disease, who has reported favourably of it. But as he prescribed it in conjunction, with the very liberal exhibition of wine, his experiments are not at all satisfactory.

Cinchona was, at one time, a very popular remedy in pertussis. This curious affection, though ultimately spasmodic, is often, in the primary stages, of a febrile and inflammatory nature. During this state, mercurial purges, venesection, and the antimonials, are our best means. But, as is observed by Cullen, "when the complaint is more advanced, and the force of the contagion is probably gone, and the paroxysms are kept up merely by habit, I am pretty certain, that the bark will then put an end to it, provided only that no congestion has been formed or continues in the lungs."*

The bark has been very generally and indiscriminately directed in asthma. This disease is divided with much propriety into several species, which, though agreeing in their leading characteristics, differ very materially as regards their origin and even treatment in some instances. To no one of the cases is our medicine calculated, in the slightest degree, to be serviceable during the pendency of an attack. But as a powerful tonic, the bark may no doubt be advantageously made to con-

* It has of late become a very fashionable practice in England, to treat whooping cough with a combination of bark and the cajiput oil, with what success however I do not know.

stitute a part of the regular course of treatment which is intended to corroborate the system, with a view of preventing the recurrence of the paroxysms.

To this end it seems to be well fitted, and especially in these cases of the complaint, which are attended by flatulence, acidities, and other indications of gastric infirmity.

DISCOURSE XLIX.

The subject continued.

NEXT, I am to say something of the powers of bark in the cachexiæ, and first of its use in pulmonary consumption.

As a general rule this practice is unquestionably pernicious. But there are certain cases of the disease in which, perhaps, the medicine should not be altogether neglected. Cullen has very precisely described one of these. I have, he says, "met with cases, in which, with all the symptoms of phthisis, the exacerbations of hectic were marked with more or less of a cold stage, and regularly, at stated periods, commonly quotidian, but sometimes tertian. In such cases, I have given the bark, with the effect of suspending the paroxysms, and at the same time, with the relief of almost all the other symptoms of the disease. But, continues he, I have never, under such circumstances, made a complete cure."

There is however a second case of phthisis, or at all events of pulmonary affection, in which the bark is a less ambiguous remedy. The case to which I allude, is of extreme debility, accompanied by wasting of the flesh, and a small dry

cough, in which is thrown up mucus of a sweetish taste, and not foetid, as in genuine consumption.

No hectic fever, or chills, or sweats exist. The patient however lingers in a very uncomfortable condition, and fills all who are immediately interested in his fate, with the utmost solicitude. But at this stage of the disease, I am disposed to believe, that there is no very serious injury of the lungs, these organs partaking only of the general debility of the system. Cases of this description are sometimes relieved by a course of tonics, among which the bark has been found to be not the least advantageous. Deciding from what I have seen myself, I should say, that this form of pulmonary derangement is often to be met with, and it is highly probable, that it is precisely the case which was so successfully managed by Sydenham, by riding and other modes of invigoration. It is here too, that mercury and digitalis prove so conspicuously detrimental, by exhausting the strength, and undermining even the very props of vitality.

As a part of the practice in scrofula, the bark is deserving of our respect, it being now universally considered as one of the means with which we most effectually combat that disease. The treatment of it naturally divides itself into such as is applicable to two very distinct periods. The first is that, in which, without any sore, or tumefaction, there is sufficient evi-

dence of a strumous disposition. At this time, the bark alone, or in union with steel, together with a change of air, exercise, sea bathing, and a generous diet, constitute the best remedies.

Nor is our medicine hardly less useful in the second period, when the disease becomes fixed, and has fully disclosed itself. I have already mentioned, I believe, that it is here such signal benefit has been derived in some instances from combinations of bark and mercury. To command the advantages however, of this combination, we must studiously avoid urging the mercury too far, as it is well ascertained, that a deep impression from it aggravates all the worst symptoms of scrofula. It is given with a view only to its alterative effect, while we endeavour to sustain the powers of the system, by the tonic operation of the bark.

Even in the ultimate stage of this disease, when large ulcerations, or abscesses, with copious discharges of an illaudable pus, exist, the bark has not always been appealed to without effect. It is, indeed, under these circumstances, that its powers have been the most celebrated by many practitioners.* †

* Combinations of bark and cicuta are here also prescribed, and with advantage.

† In the management of rickets, an affection, allied in some measure to certain forms of scrofula, we proceed on pretty nearly the same plan of cure, and hence have often a recourse to the bark, in various states of combination.

The bark, at one period, had attained no little reputation even in the cure of cancer. To this point, we have especially, the testimony of De Haen, and Akenside. It is now however, pretty well ascertained, that in common with all other modes of treatment, it fails in this intractable affection, though it is well known, that it is eminently serviceable in all ulcers of a foul and phagedenic character, proceeding from, or connected with a weak and depraved condition of the system. It is here exhibited internally, to sustain the general strength, while either as a wash or a poultice it is locally applied.

To some of the forms of dropsy, bark has been thought to be adapted, and I can easily conceive, that it might do good, under circumstances of extreme debility, and where the powers of the stomach are much disordered or impaired. But there is another description of cases, to which it is still better suited. Dropsy, of every species, sometimes appears in the intermittent character, either as originating in miasmatic districts, or as the effect of long protracted ague and fever, and the bark when properly employed, is one of the most valuable of our remedies.

As might be supposed, our medicine has been resorted to in scurvy. Whatever may be the cause of this disease, it is undoubtedly one, the essence of which is debility, in which the digestive organs largely participate. Either as a pre-

ventive, or for the cure, in the early stages of scurvy, the bark, I should presume, ought to yield to some other remedies, or modes of treatment, of more approved efficacy. But in the progress of a case, symptoms do frequently arise, which demand the use of this very active tonic.

It is accordingly much commended by Lind, whose experience was ample, and we have the no less authority of Milman for the fact, of cures having been made in several instances by the bark alone. In that description of scurvy, which displays itself in the gums, the bark is admitted, on all hands, to be peculiarly serviceable. It may be used as a lotion, or as a dentrifrice, alone or mixed with myrrh.

In several of the diseases, improperly placed in the class of Locales, the bark is an important part of the treatment, and leucorrhœa is one of these cases. By most writers, the vagina is deemed to be the seat of the discharge, and in consequence of this error, the practice in the case is exceedingly unsuccessful. It has long been my opinion, that the uterus itself, is the part chiefly affected, and that the discharge is a mere vitiation of the menstrual fluid, owing to the wrong or perverted state of the secretory function. To this conclusion, I was conducted, by having remarked, that in genuine *fluar albus*, menstruation is uniformly suspended, and is never restored while the complaint continues. Dissections also shew, that the uterus is in a disordered

state, having been commonly found pale, flabby, and relaxed.*

Conforming my practice to this theoretical view, I always attempt the cure of leucorrhœa, by directing my remedies to the uterus, through the intervention of the general system. The bark is one of the medicines alone, or in combination with steel, which I have employed with most success.

Combinations of bark and the balsam copaiva, prepared in the form of an electuary, I have sometimes prescribed with no less benefit in this disease, in old gleets, and in a still more afflicting ease, the gonorrhœa dormientium. This latter affection, in which there is an involuntary emission of semen during sleep, often proceeds from constitutional debility, but is more generally caused by excessive venery, unnaturally indulged.

To complete our present enquiry, it remains for me only to say something relative to the use of the bark in gangrene. Of all the medicines which have been recommended in these cases, none certainly has acquired so much reputation. Being a powerful tonic, it probably operates by strengthening the system, and thus maintaining in every part the necessary tone for resisting the progress of the disease. Much injury, however, has unquestionably been done by the too general and indiscriminate application of the bark.

* Discharges from the vagina I am sensible take place, and which may be cured by washes. But these are different from real leucorrhœa.

Gangrene may be preceded or not, by active inflammation. In the former species, none of the tonics or stimulants are proper in the early stages. Copious venesection and purging will much more effectually arrest the tendency to gangrene, and bark can never be useful, till the inflammatory state subsides, and the patient begins to sink, and particularly, when, with these circumstances, we are able to perceive the beginning of a separation between the dead and living parts. But gangrene sometimes originates in debility, or is the effect of a low typhoid state of fever, and where this happens, the bark may be early resorted to, and perseveringly continued.

Every practitioner seems however to admit, that the powers of the bark in these cases, are improved by uniting to it some other articles; such as camphor, volatile alkali, musk, or serpentaria, and that we ought also to bring into co-operation, the more stimulating beverages, among which wine, or strong wine whey, is to be preferred.

The very great success, attending the application of blisters in gangrene, has had the effect in some degree, to throw into disuse the bark. But whatever may be the efficacy of these applications, and no one has more confidence in them than myself, I am still of opinion that the total rejection of our medicine is improper. The bark may most commonly be dispensed with in gangrene from wounds or other injuries, and as

under these circumstances, there is generally fever of the inflammatory species, it might even be mischievous. But as I have before stated, this same affection is not unfrequently the concomitant, or the consequence of constitutional debility, and surely here, it becomes an highly important indication, to renovate, or sustain by general remedies, the powers of the system.

Of the use of bark, in the cure of diseases, I have nothing more to say. Before however dismissing the subject entirely, I will add some remarks on the several modes of exhibiting this valuable medicine. It has already been mentioned, that the usual manner of doing it, is in powder, mixed with some fluid, as milk or coffee, or wine and water, or an infusion of serpentaria, or liquorice. Many persons however cannot take it in substance. It therefore becomes us to extract, by means of some agreeable menstruum, its active principles. These, according to the latest analysis, are bitter extractive, tannin and gallic acid, united with some mucilage and resin, of which the two last are not soluble, in any one vehicle. The three other constituents, on the contrary, in which all its activity resides, are very soluble both in water and alcohol. These menstrua are hence much employed.

In making the infusion, it is customary to put one ounce of the bark coarsely powdered to a pint of boiling water in a close vessel, and after stand-

ing till it becomes cold, it is decanted for use. The dose is proportioned to the strength of the stomach, though even in the largest quantity it is a feeble preparation, and is hence seldom prescribed. The decoction is greatly to be preferred.

Different formulæ are used for this process. The one which I most approve requires that two ounces of coarsely powdered bark be put into a quart bottle of water, which after being lightly corked, is to be placed in a pot of water, and boiled for two or more hours. This is a very elegant preparation, and one of considerable efficacy. The dose of the decoction is a wine glassful.

The tinctures are prepared either with wine or brandy, but, on a variety of accounts, are now so little prescribed that I shall not notice the process.

By a tedious pharmaceutical operation the extract of bark is made. It is seldom resorted to, being feeble and precarious. To the dispensaries I refer for the formula of both of the preceding preparations.

To correct some inconveniences occasionally produced by the bark it is frequently combined with other remedies. When it excites vomiting, or oppresses the stomach, we add an aromatic, as formerly stated: when it purges, opium: when it induces constipation, rhubarb: and where there is much acidity of the stomach, magnesia, or small portions of the mineral or vegetable alkali.

Notwithstanding, however, the various means

which have been devised, to secure the due administration of the bark, cases are of common occurrence, in which it cannot be given by the mouth. This is owing most generally to the irritability of the alimentary canal, by which it either at once is rejected, or runs off so speedily, as to leave no salutary impression. It is usual, under such circumstances, to resort to injections, and these are represented sometimes to answer exceedingly well. I have never employed the bark in this way, except in some very few instances among children, it being difficult to persuade adults to acquiesce in the repetition of the enema, as often as is necessary to the attainment of the effect of the remedy. I have perhaps done some good with it, though I am not prepared to state, that it is adequate to the arrest of intermittent fever, or to the cure of any very obstinate disease.

Besides the objection to the practice, which I have just mentioned, there is another arising from the uncertainty of the retention of the medicine, and this objection always exists, in a greater degree, when it is most demanded, the bowels being either already irritable, or become so, after a short time, by the frequent introduction of the pipe. The best formula, for such an injection, is to entangle two or three drachms of the powdered bark, in the mucilage of starch, flax seed, or gum arabic in the smallest quantity: so that it may operate as slightly as possible, as an extrane-

ous stimulus, and to do away irritability, it is proper to add a certain portion of laudanum each time.

In the external application of bark, different plans have been proposed. Cataplasms of it, put over the stomach, are said to have proved serviceable, and baths of a warm decoction, either as a pediluvium, or large enough for the immersion of the whole person, still more so.

As a remedy in intermittent fever, I have never tried either of these contrivances. They probably however would be useful, and I have learnt, they have actually proved to be so, in the hands of some country practitioners. My employment of the remedy has hitherto been confined to the purpose of restraining inordinate vomiting in cholera morbus, to the violent retchings of malignant fever, and to some cases of chronic diarrhoea, as the last stage of what is called the summer complaint in children. To meet this indication, or indications, it is eminently calculated, and will sometimes afford relief in circumstances of apparent desperation. This latter practice, I believe, originated with me. The bark of the black oak of our country, such as is furnished by the tanners, I have preferred, not only on account of its cheapness, but as being more active.

In a dry state, bark has also been applied to the surface. It is said by Darwin, that if the powder be strewed pretty abundantly in a bed, in

which a patient lies, it will cure ague and fever. To believe this, even on such high authority, requires a considerable stretch of credulity. But when applied in a different way, it has certainly produced this effect. The mode in which I mean, is to quilt it in a pad, which is to be worn around the body. Doubts have been expressed whether the bark jacket, as it is called, is of any utility except in the case of very young children. Though best adapted to patients in an early period of life, I am very sensible that I have witnessed advantages from it among grown persons, and especially in very delicate women. Nevertheless, it will totally fail in a great majority of instances, and on all occasions proves a very miserable substitute for the bark exhibited internally.

The manner in which these external applications act is easily to be explained. Tonic impressions made on the surface are imparted, through reverse sympathy, to the stomach, which being thus invigorated, is rendered capable of resisting the insurrection of the chain of associated motions, constituting intermittent, the primary link of which chain commences in that viscus.

DISCOURSE L.

The subject continued.

SERPENTARIA VIRGINIANA.

As perhaps, most nearly allied to the Peruvian bark, in many of its leading properties, I am next to treat of a native vegetable. The serpentaria is a species of a family of plants, to which the title of *Aristolochia* is affixed, and Linnæus, in consequence, denominated this article, *aristolochia serpentaria*.

But I prefer, on many accounts, the good old name of *Virginia* snake root, and shall accordingly retain it.

The serpentaria is a perennial plant, native of the United States exclusively. The root is the only part used as a medicine. It has an aromatic smell, and a pungent bitterish taste. In its effects, it partakes of the mixed qualities of the stimulant and tonic. It is moreover actively diaphoretic, and sometimes promotes the urinary secretion.

Endowed with these valuable properties, it has of course been employed pretty extensively. Being however most commonly united with the bark, I have already in the history of that article applied

it to most of the indications, which it is competent to meet.

Among the more early uses of the medicine, was in the cure of intermittent fever. Whether alone it is adequate to this purpose, does not clearly appear. It was used by Sydenham, in conjunction with wine to prevent the recurrence of the paroxysm, and from his account not without advantage. As a general rule, he says, that in all cases, where it is expedient to combine wine with bark, the effect will be much increased by adding serpentaria.

The correctness of this observation has been fully confirmed by subsequent experience, and it is now very much the practice to unite the two articles in the low states of disease.

I have remarked, that it is still doubtful whether the serpentaria by itself will cure ague and fever. Be this as it may, it is certainly a powerful auxiliary to the bark in these cases. It not only adds to its efficacy, but, what is of great consequence, enables the stomach to retain the medicine.

To remittent fever, the serpentaria seems to me to be better adapted. It has here, in many cases, an indisputable superiority over the bark, inasmuch, as it is rarely offensive to the stomach, and may be given, without injury, in those obscure states of the disease, where the remission is not readily discernible. There is one preparation, however, of the medicine, which often evinces such decided

efficacy even in the most intractable cases of intermittent, that I shall mention it.*

Why the serpentaria or bark, in this manner prepared, should possess any peculiar powers, it is not easy to determine. But the fact is indubitable. I have seen it exemplified as well in my own, as in the practice of other persons.

As a popular remedy, more particularly, the snake root is much resorted to in the management of the secondary stages of pleurisy. After bleeding, it is the ordinary practice in many parts of our country, to resort to a strong infusion of this article with a view of exciting perspiration, and the result is said to be generally favourable. Catarrhs, rheumatisms, and other winter affections, incident to rustic life, are managed in the same way. It is also a favourite remedy in dropsy, to which, I should presume, it might be adapted, and especially, if the case were of an intermittent type.

In that species of pleurisy which is properly enough designated by the epithet bilious, I have repeatedly had occasion to recur to the serpentaria, and always with more or less utility. I know not indeed any modification of disease, in which it displays its powers more advantageously. The bilious pleurisy has all the characteristics of pneumonic

* B. Cort. peruv. 3ss. rad. serpent. 3i. soda carb. gr. xl., m. div. in pulv. iv. Of which powders one is to be taken four times a day.

inflammation, with the addition of some of the symptoms incident to autumnal fever. There are considerable head ach, much gastric distress, and almost always violent vomitings of bile. It differs also from ordinary pleurisy in having less activity of inflammation, and consequently in not bearing the same extent of depletion. The system indeed will often be very evidently depressed by one or two bleedings. In this case, the practice which has been commonly pursued is, after the removal of comparatively a small portion of blood, and the thorough evacuation of the alimentary canal, to administer very freely draughts of the infusion of serpentaria, in order to excite copious diaphoresis.

As an epidemic, the bilious pleurisy prevailed in the neighbourhood of this city many years ago, and I am informed was managed most successfully by the practice which I have detailed. It is not, however, one of the ordinary complaints of the climate of the middle states. The cases which I have seen of it, have, for the most part, occurred in persons coming from districts of country exposed to marsh exhalation, and who have had previously a bilious fever.

I have only one more remark to make on the properties of this article, and which is, that it is admirably suited to check vomitings, and to tranquillize the stomach, and more particularly in bilious cases. It is given for this purpose in de-

coction, in the small dose of half an ounce or less at a time, and frequently repeated.

EUPATORIUM PERFOLIATUM.

Of this, I have treated under the head of dia-phoretics, where it is mentioned, that to the power of exciting vomiting, is added other active properties, as those of a diuretic, and especially a tonic. It is deserving of remark, that its operation depends, not a little, on the mode in which it is exhibited. As a warm beverage either in infusion, or decoction, it will puke, or stimulate the surface, or kidneys. But if given in cold decoction, or what answers still better, in substance, it hardly ever fails to evince its tonic effects.

I have had lately put into my hands a very well written tract, in which the properties and medicinal applications of this article are discussed more fully than has hitherto been done.* By the reports of the writer, it appears, that in the Public Institutions of New York, it has been most extensively employed in intermittent, remittent, and yellow fever, in typhus pneumonia and in catarrhal fevers, in several cutaneous affections, in dropsies, and for the removal of mere debility. By properly regulating the manner of administering the medicine, it has, according to him, fulfilled successfully.

* Anderson on the Eupatorium, &c. &c.

all these diversified indications. After making a due abatement for the confidence in which new and favourite remedies are always announced to the public, I entertain little suspicion of the accuracy of the accounts to which I have alluded. My own observations, together with communications which I have received from highly respectable sources, would indeed nearly confirm every part of the preceding statement relative to the efficacy of this medicine, and especially in intermittent and remittent fever.

To these affections, it seems to be particularly adapted, inasmuch as having the united properties of a diaphoretic and tonic, its use may be continued in the successive stages of the paroxysm, as well as during the apyrexia.

EUPATORIUM PIOSUM.

This a second species of this numerous family of plants. It is perhaps better known to many by the provincial title of "*wild hore hound.*" The plant grows in almost every section of our country, and is fully incorporated among the domestic remedies. By the president of the Medical Society of Georgia it is said, "that it serves as an excellent substitute for the Peruvian bark, and indeed, that among the planters in or near the sea board, it supersedes the bark in the cure of fevers. It is tonic, diaphoretic, diuretic, and mildly cathartic,

and does not oppress the stomach, as the bark is apt to do, hence it may often be exhibited where the cinchona is inadmissible. It is usually given in the form of infusion: One ounce of the dried leaves infused into a quart of water may be taken daily in doses of from two to four ounces every hour or two. It may advantageously be combined with Peruvian bark, and though it may sometimes fail of producing the desired effect, I think that it well deserves a station among the articles of the *materia medica.*"

In this sentiment I entirely coincide. My own practice has not afforded me many opportunities of using it, but I distinctly recollect that in *Virginia, my native state*, it was a common, and an efficacious remedy in the cases which have been mentioned, and to these I might add the catarrhal affections, or obstinate coughs, and also as a bitter tonic in weak and depraved states of the stomach. It was indeed in these latter cases that it appeared to display its best powers. The popular mode of using the horehound is as a tea, and sometimes for coughs, it is made into a syrup or candy.

CHIRONIA ANGULARIS.

Of the centaury, we have a species which is, in no respect, if at all inferior to the European. It is the *chironia angular* of *Linnæus*. The centaury of the shops, is the *chironia centaurium*. Native

centaury is a very beautiful annual plant, growing abundantly in the middle and southern states, every part of which is medicinal, though the flowers are infinitely more so. It is a very pure bitter, with some little aromatic flavour, and is by no means unpleasant to the taste, or offensive to the stomach.

As a remedy, it is resorted to extensively, by every description of practitioners, regular and irregular, in our intermittent and remittent fevers. Like some other articles, it has the advantage over the Peruvian bark, of being susceptible of employment in every stage of these diseases. The usual mode of prescribing it, is in strong infusion, of which copious draughts are directed to be repeatedly taken.

CORNUS FLORIDA.

By our forests, we are supplied with two species of cornel or dog wood, each of which is an useful tonic. These are the *cornus florida*, and *cornus cericea*. By a graduate of our school,* both of these articles have been very ably investigated. It appears from his experiments, that, on analysis, they present the same results as the Peruvian bark, and, that their effects on the system are also essentially similar, though rather more stimulanting.

* Dr. Walker of Virginia

The *cornus florida* is too familiar to require any description. But the *cericea* is probably less known by this title. It is the shrub, which is vulgarly called the red dog wood, the red willow, the red rod, and grows exclusively, in marshy or damp soils.

As so closely allied to the Peruvian bark, in their sensible and chemical properties, it is presumable that these two substances might be applied to the same extensive circle of cases, though no such application, has hitherto been made. The *cornus florida* is much employed as a substitute for the bark in ague and fever, and I suspect its use is nearly limited to this case. Of its efficacy here I entertain not the slightest doubt, though I have no very extensive experience with it. Concurrent accounts from many distinguished practitioners have fully satisfied me on this subject.

The bark of each species of cornel may be exhibited in all the forms in which the Peruvian medicine is used, and nearly in the same dose.

PRUNUS VIRGINIANA.*

This is a native tonic, of very peculiar and valuable powers. It is the wild cherry tree in the common language of the country. The bark of the trunk, or of the root, which is still more active is the

* *Cerasus Virginiana*, of Michaux.

part used. To the taste, it is a mixture of the bitter, the astringent, and the aromatic, resembling not a little the flavour of the peach kernel. On the system, it, at first, produces the effects of a narcotic stimulant, which however are followed by the more permanent impressions of a tonic.

Of late years, our medicine has acquired, and I believe deservedly, considerable reputation in a variety of diseases. Among the earliest applications which were made of it, was to the cure of intermittent fever. In this case I have not much knowledge of it, but it is even extravagantly spoken of by some highly respectable practitioners. My experience with it is chiefly confined to the pulmonary affections. In the Alms House I have experimented largely with it, for several years past, and had often reason to be satisfied with the results. It is well suited to the hectic of phthisis, and perhaps equally so, when proceeding from other causes, as it is reputed to have done good in psoas abscess attended with this species of fever, and colliquative sweats.

Nor is this all. By a judicious administration of the medicine we shall often find, in the case of consumption, the cough relieved, diarrhoea restrained, profuse perspirations abated, appetite invigorated, and the general strength sustained, though still, it is a mere palliative, and will not cure the disease.

Much relief has been procured in several in-

stances of asthma, which have come under my care, by the long and persevering use of the medicine. It has been prescribed by me in both species of the complaint, the pituitous and spasmodyc, without any regard to the distinction between them, and I am not sensible with any material difference. Conformably to my own experience, which however is not sufficiently enlarged or diversified to pronounce any very confident opinion, I should say that, upon the whole, I have rendered as much service in this distressing complaint by it as any other remedy. Being a tonic, it is to be given in the intervals of the paroxysms, so that by renovating or supporting the tone of the pulmonary system, it may ward off the repetition of attacks.

Not a little has been said of the powers of our medicine in dyspepsia, and in the chronic stages of dysentery, diarrhœa, and cholera infantum, and though I have never tried it in any of these cases, I am persuaded, that it might be beneficially done, under precisely the same circumstances in which we resort to the Peruvian bark, and other corroborant substances.

The cherry tree bark may be given in substance, or in tincture, decoction, or infusion, and in rather a larger dose, than the same preparations of the Peruvian bark.

DISCOURSE LI.

The subject continued.

CUSPARIA FEBRIFUGA.

THE angustura, as it is usually called, is a late, and I suspect, in some respects, an important acquisition to the *materia medica*. It is a tree which grows in South America, the botanical history of which was unknown, till that country was visited by baron Humboldt, who ascertained it, and conferred on it the above title, by which it is now universally recognized. As it comes to us, the bark is in small wrinkled pieces, having an unpleasant smell, and a taste bitter and slightly aromatic.

Angustura was originally introduced as a remedy for intermittent fevers, and at the same time acquired so much reputation, that it promised even to supplant the Peruvian bark in these affections. But more enlarged experience corrected these sanguine anticipations, and as often happens, medical opinion, with respect to this article, ran into the opposite extreme: Its character was so rapidly depressed, that though only brought into the prac-

tice of physic in the year 1778, we, for a considerable period, heard nothing of its employment.

Very recently, however, our attention has been recalled to it, by some of the most respectable of the English practitioners. It is particularly recommended by Brand and others in the low states of fever, who insist that it is to be preferred to cinchona, as, while possessing all the virtues of that article, it is not so apt to offend the stomach, or to excite purging. By these same practitioners it is also extolled in chlorosis, in pertussis, in periodical head-ach, in dyspepsia, and in a variety of other gastric and nervous complaints. In the affections of the stomach especially, it is pronounced, by Pearson, to be incomparably superior to all the vegetable tonics. My own experience teaches me nothing of its powers in any of the preceding cases. As yet, I have only used it in chronic diarrhoea, and in the last stages of dysentery. It has here answered pretty well as an astringent, though I am not sensible of having derived any very extraordinary advantages from it. Notwithstanding this, I repose no slender confidence in it, and would be pleased to see it subjected to fairer, and more extensive experiments than I have made. It may be administered in infusion, decoction, tincture, or powder. The last mode is best, and the dose is from a scruple to a drachm, in water or any similar vehicle.

COLUMBO.

Of the plant which supplies the columbo, no botanical account has been obtained, on which we can rely. It is however said to be a herbaceous vegetable, and most probably is a species of *frasera*. Being brought from Columbo, a city in the island of Ceylon, it is designated accordingly. The root is only used, which is imported in small pieces, possessing some aromatic odour, and is intensely bitter.

Like the articles generally of the class to which it belongs, the columbo was once tried in intermit-tent and remittent fevers, and though perhaps not altogether ineffectual in these cases, its powers were comparatively so inferior, that it has ceased to be employed. The only case of fever to which, at present, it is thought to be applicable, is that of hectic, and here it is certainly, sometimes, pre-scribed with advantage.

It is in the various complaints of the alimentary canal, acute, as well as chronic, that it has confessedly displayed its greatest powers. By the writers of the warm climates, and particularly of the East Indies, the columbo is represented as a very valuable remedy in checking the violent bilious vomitings incident to cholera morbus. It has also been celebrated in diarrhoea, dystentery, and cholera morbus. In each of these cases I

have much employed it, and often beneficially. To the later stages of dysentery, after pain and inflammation have ceased, the medicine alone is adapted. But I have derived still more advantage from it, in the cholera of children, and exactly under similar circumstances. It will here restore tone to the alimentary canal, and renovate generally the strength of the system:

Cullen speaks highly of our medicine, in dyspepsia, and I am inclined to believe, that his report relative to it has been fully corroborated. I certainly have seen it do good. It may, in the gastric affections, be either given alone, or with other substances, as the preparations of steel, &c. But I apprehend nothing is gained by such combinations, serving on the contrary only to destroy or vitiate the purity of the bitter, on which the chief excellence of the article depends.

Columbo may be exhibited in powder, infusion, or tincture. But the first of these forms is to be preferred. The dose for an adult, is from half a drachm to two drachms to be mixed with water.*

* Not long since, a plant which is commonly considered as a species of columbo, but which is more probably a gentian, was discovered in the vicinity of Marietta in the state of Ohio. It appears from the most authentic accounts which we have had of the plant, that it is a large and well proportioned one, of seven or eight feet in height. The plant is triennial. Experiments prove it to be equal, if not superior to the imported. But of this I am not entirely persuaded, as from the specimens which I have seen, the root is of a lighter colour, and

GENTIANA LUTEA.

This is one of the purest of the bitter tonics, and is a valuable article, though it was once pronounced to be deleterious.* It is a native of several of the countries of Europe, and is found in no section of the new world. The root is the only medicinal part of the plant.

At one time, and especially by the Scotch physicians, gentian was supposed to be possessed of considerable febrifuge powers, and was accordingly employed in intermittents, though with what success is not well determined. Cullen seems not altogether to reject it, and Lind speaks decidedly in favour of it. The probability however is, that it does not deserve much attention in these cases.

As among the most agreeable of the bitter tonics, its claims are much higher as a remedy in debilitated states of the alimentary canal, as in dyspepsia, and diarrhoea, and particularly in the former case, it being found very often to excite appetite and promote digestion, and hence is a leading ingredient in most popular "*bitters or stomachics*," as well as the officinal preparations of this nature. It

seemed to have infinitely less of the bitter principle. The properties of plants however are much influenced by soil, position and culture, and when more attended to, perhaps our native medicine may be improved.

* By Haller

was formerly commended in the calcareous and arthritic affections, and enters largely into the composition of the famous *Portland powder*. Commonly, it is prescribed in tincture or infusion, though it may be given in powder, in the dose of twenty or thirty grains.

QUASSIA EXCELSA.

This, which is more generally called bitter quassia, is a tree of some size growing in Surinam, and along the coast of South America. Every part of it is intensely bitter, though the wood is preferred as a medicine. To a West Indian negro, called Quassi, who first used the article in fevers, it owes its title. Not a little was said of its powers, at one time, in the several forms of febrile affection, intermittent as well as continued, by some highly respectable practitioners. But in this respect it has nearly lost its character, so that it is never employed in any of these cases, except as a tonic in the convalescence, or to check bilious vomitings. Nor has it more reputation in gout or calculus, or the neuroses, where it was formerly so much commended. The only cases indeed, in which any great degree of confidence is reposed in it, are those of debility, and especially of the stomach and bowels, it very often proving useful in both dyspepsia and diarrhœa. Quassia is generally prescribed in infusion. But pills made of

the extract are sometimes directed, though less advantageously.

QUASSIA SIMARROUBA.

The simarouba, which is a species of quassia, is found in St. Domingo chiefly. Like the preceding article, it was once a good deal thought of in the febrile affections, and intermittents particularly. But it can hardly now be considered among the remedies in these cases, and is only retained as being occasionally useful in diarrhoea, and the advanced stages of dysentery, after thorough evacuations. It is the bark of the root that is medicinally employed, which may be given in powder, in the dose of twenty or thirty grains, or infusion, the latter answering best.

SWIETENIA FEBRIFUGA.

This is a species of mahogany, so called after Van Swieuten, and, was greatly extolled in intermittents, by Roxburgh, who first brought it into notice. But subsequent experience has by no means realized what he said in its favour, though there can be little doubt that it is well suited to the disease as it appears in the East Indies. Being actively astringent, it may sometimes be substituted for the Peruvian bark, where it purges, and would probably be useful in any of

the bowel affections whether connected or not, with that disease. The bark is the medicinal part of the tree, and may be exhibited in the dose of half a drachm in substance, and in the same proportion in tincture, decoction, or infusion.

CROTON ELEUTHERIA.

Cascarilla is chiefly imported from the West Indies. It grows however, in the southern extremity of the United States. As it comes to us, the bark is in small quills of a gray colour, having an aromatic smell, and a warm bitter taste.

Cascarilla maintained for a long time, great repute in different kinds of fever, and during the early part of the last century, when the use of Peruvian bark was so strongly resisted, by the disciples of Stahl particularly, it nearly supplanted that article. It has not however, for many years, been employed in these cases, and though I do not know from my own experience whether it was justly discarded, still I cannot help suspecting, that at present its powers are underrated. Endowed with several of the leading properties of the serpentaria, it is reasonable to suppose, that it might do good under similar circumstances. As a remedy in hectic, I cannot doubt of its efficacy, having often witnessed it myself, and the analogy between these two forms of fever is sufficiently close to warrant its extension to the former case.

The dose of this article is half a drachm, and may be given in powder, tincture, &c.

HUMULUS LUPULUS.

The hop is a native of England, and has hitherto chiefly attracted attention as an article of commerce, from its importance as an ingredient in malt liquors. But it is also possessed of some valuable medicinal qualities, and deserves a place in the *materia medica*. The flowers of the plant are alone used, which are odorous and aromatic, bitter and astringent, and decidedly tonic and anodyne in their effects.

Of the bitters, there is scarcely one more agreeable to an enfeebled stomach than the hop, and hence it is very advantageously prescribed in dyspepsia, particularly where it proceeds from intemperance. But it is, perhaps, as a narcotic that it has the highest claims. The fact of its being possessed of this property was long known, so generally so indeed, that a pillow of it came to be a popular expedient to quiet nervous irritation and procure sleep.* But an exact investigation of its powers was first made about twenty years ago by my friend Dr. De Roche, in his inaugural essay, at Edinburgh, and since that period the arti-

* It is said to have been directed by Dr. Willis in the case of the king of Great Britain, and with effect. My own trials of it have not however inspired any confidence in its powers.

cle has been greatly employed in regular practice, both in Europe and this country.

As an anodyne, it may be substituted with advantage for opium, where the latter from idiosyncrasy or other causes, does not suit the case. It is singularly well adapted to drunkards, and I have found it a useful auxiliary in the treatment of mania a potu. Whenever indeed, the nervous system or the stomach is much deranged, the hop will always prove more or less beneficial. As an antispasmodic it is certainly not without power. It has been prescribed in the neuroses, with what effect I do not know. I have sometimes tried it in the advanced stages of typhoid fevers, where nervous tremors or subsultus tendinum existed, and derived good from it. It is also serviceable in spasmodic uneasiness of the uterus, either before, or subsequently to delivery.

The hop may be exhibited in decoction or infusion, in tincture, or pill made of the extract. As a tonic I have found the infusion best, and as an anodyne the tincture. The former may be taken in the dose of a large wine glassful, and the latter in that of a tea spoonful, each to be repeated, and increased, as the case may demand.

In treating of lithontriptics, I noticed the supposed powers in this respect of the infusion of hop as well as of malt liquors. Notwithstanding however what has been said in favour of the latter by some writers, they are charged with laying the

foundation of gout, and calculus. Yet we have some very strong evidence against such an opinion. It is recorded by Cyprian, a lithotomist, whose reputation as an expert operator was diffused all over Europe, that of the fourteen hundred patients whom he had cut for the stone, there was not one who had used malt liquor as a common drink. It is also stated, by Haller, that of one hundred persons who died under his care, with gravel, no one drank beer.

By Sydenham, who was himself a victim of gout and stone, evidence of a similar import is furnished.

“To prevent bloody urine, says he, whenever I am obliged to go very far in my coach on the stones, I always drink a large draught of small beer before I set out, and another on the way, if I am abroad a considerable time. By which means I secure myself pretty well from bloody urine. A draught of small beer serves me instead of supper, and I drink another draught after I am in bed, and about to compose myself to sleep, in order to cool the hot and acrid humours lodged in the kidneys, which breed the stone.”

Nevertheless, the predominant opinion among physicians at the present time seems to be, that malt liquors are prejudicial in the respect to which I have alluded, and as it is founded on very enlarged experience, it is, perhaps, safest as a guide in practice to consider it correct.

DISCOURSE LII.

Mineral Tonics.

IN commencing the history of the mineral tonics, I shall bring into view, in the first place, some of the preparations of iron. As medicines, they are entitled to this precedence, on account of their superior utility, and extensive employment.

As a remedy, iron was very early introduced into the practice of physic. It seems indeed to have been known even to the primitive cultivators of our science, and has always been regarded as one of the few metallic substances friendly to the animal system.

This opinion has perhaps proceeded not less from the comparative mildness of the effects of iron, than from its constituting, as was supposed, one of the elements of the blood, and of certain parts of the solids. It has also, on this account, been very generally classed among the medicines presumed to operate, by entering the circulation. Even conceding the fact of its passing unchanged the digestive and assimilative processes, it would afford no sort of support to this ancient hypothesis. Being an ingredient in the animal composition, it is reasonable to suppose, that it would, of course, be admitted into the blood yes-

sels to a certain extent. But probable as this appears, the contrary has nevertheless been shewn.

Experiments exceedingly numerous and well contrived, which were originally made by Dr. Edward Wright, and subsequently repeated by Dr. Hodge of this university, under every circumstance of care and attention, demonstrate, most conclusively, that none of the preparations of this metal, can be detected even in the chyle. But it is contended, that under the use of chalybeates, the blood uniformly becomes more florid, and as this quality is thought to depend in part on the iron it holds, it is deemed pretty strong presumptive evidence of the metal being absorbed. No doubt such an effect is produced, and so it is in an equal degree, by any medicines, or course of life, which invigorates the system, and infuses the glow of health. The blood of every animal which has been examined, is found to possess iron, however various their food, or habitudes, and as in many instances the metal could not possibly have been taken in, it is obvious, that it must be generated by the processes of the animal economy, in the same manner as many other things are elaborated.*

In its operation on the system, iron evinces all

* Amidst the contradiction and uncertainty which exist on this point, it would seem to be the best established opinion, at present, that iron in no one shape can be detected in the blood. By the calcination however of this fluid, it is then developed, though in what precise state

the effects of a powerful and permanent tonic, no medicine perhaps leaving behind it such lasting impressions. The indications, therefore, that it is calculated to fulfil, are numerous and important, most of which, however, are embraced within the sphere of chronic debility. In discoursing on other substances, with which it is customary to combine these preparations, I have anticipated, in a great measure, the application of the latter to the cure of diseases. This is more particularly so, as regards some of the cases of the class of neuroses, as hysteria, hypocondriasis, and its concomitant affections, as well as chlorosis, amenorrhœa, dyspepsia, &c.

Diseases, however of a very different nature, are advantageously treated by iron. Thus, in hæmorrhagy, it has been celebrated from the earliest periods of antiquity, and under the idea of its being actively astringent. But there is no evidence of its having this property in any great degree, nor is the assumption of it necessary to the explanation of the good effects which it occasionally displays in these affections.

To menorrhagia, attended with extreme laxity of the uterine vessels, and general debility it is perhaps best suited. I have here now and then

still remains doubtful. Experiments made by feeding animals on vegetables containing not a particle of iron, the blood of which, however, on calcination, displayed the usual portion of the metal, fully warrant the above hypothesis of the article being created.

employed it, and not without advantage. It may appear somewhat surprizing, that the same remedy should be applicable to two such opposite cases, as the suppression, and inordinate flow of the menses. But the apparent paradox is readily reconciled, as each of these complaints has its origin in causes which are equally to be removed by the tonic power of the article.

Much has been said of the efficacy of our medicine in the cachectic diseases. Combined with bark, I have already intimated, that, in scrofula, ricketts, dropsy, and even in pulmonary consumption, it may be so managed, as to be serviceable. Nor, perhaps, was it unknown, that, in all obstinate ulcers of a feeble or phagedenic character, from whatever cause proceeding, much advantage might be derived from the chalybeate articles. Of late, however, the practice has been applied with greater precision to the cure of cancer by some of the English surgeons, and especially Mr. Carmichael, who recommends the medicine to be continued for a great length of time, in large and increasing doses, while the ulcer is sprinkled with the powder of the carbonate, or some of the saline preparations, or washed with the muriated tincture.

Of the success of this treatment I know nothing from personal experience, it never having been tried by myself, nor so far as I have heard, by any other physician of this city to any extent. But it

comes to us from sources sufficiently respectable to entitle it to some degree of confidence, and even if it fails to cure cancer, it may palliate symptoms, and at all events, do good in ulcers of a less formidable and inveterate character.

It was, at one period, a practice to employ the chalybeate preparations in the advanced stages of diarrhoea, and even dysentery, though, till lately, they seem to have been altogether superceded by other medicines.

Whether they really possess any extraordinary powers in these cases, I cannot pretend to determine. It is now quite fashionable to prescribe the sulphate of iron, variously combined, under the circumstances which I have stated, and, perhaps, still more in the cholera infantum of our great cities.*

This medicine of course, is only suited to the more advanced period of the disease, after tormena, tenesmus, and other symptoms of irritation have subsided. It is also proper that the bowels should be previously well evacuated. Though my own experience will not enable me to say a great deal in

* 1. $\frac{3}{2}$ Sal. mart. $\frac{3}{2}$ i. acid. sulph. $\frac{3}{2}$ ss. aq. font. $\frac{3}{2}$ x. M. The dose for a child from 3 to 10 drops, and for an adult from 20 to 30 drops three or four times a day.

2. Sal. mart. gr. ii. acid. sulph. gtt. x. sacch. alb. $\frac{3}{2}$ i. aq. font. $\frac{3}{2}$. M. The dose is a tea spoonful, for a child, to be repeated as above directed, and for an adult in the same proportion.

favour of this combination, it has been so highly extolled, that I can hardly doubt its claims to our attention.

It has been an opinion, that iron, in a pure, metallic state, has no active operation on the system. But this does not appear to be well founded. The metal is easily soluble in the gastric liquor, as was long since proved, and when reduced to powder, as in the state of filings, is employed with advantage.

By chemical and other processes, iron is converted into a variety of forms, which constitute a set of very important remedies. At different periods, the whole of these have been used, more or less, accordingly as they were estimated. But in the present reformed state of our science, so considerable a retrenchment has taken place, that not many are retained in practice. Believing, indeed, that the properties of the whole class are embraced by a few preparations, which are recommended, not less, from their efficacy, than superior neatness and conveniency of administration, I shall exclude all the rest.

RUBIGO FERRI.

The carbonate, or rust of iron, is one of these preparations. It is more active than the pure metal, and less irritating, and, perhaps, uncertain in its operation than the chalybeate salts. Commonly

it is given in powder, in the dose of from five, to twenty grains, mixed with syrup, or mucilage. In cases of debilitated stomach, some aromatic may advantageously be united to it, such as the powder of ginger. It is also exhibited in the shape of pills, and sometimes as a chalybeate wine. As a stomachic, and agreeable tonic, the last form answers extremely well. My mode of preparing it is as follows.*

SAL MARTIS.

The green vitriol or sulphate of iron is a second preparation of great value. Its tonic power is considerable, and hence is calculated to meet a variety of indications. But I do not know that, in any respect, it is to be preferred to the carbonate, except, that the dose being smaller, it can be exhibited more conveniently, and is, on this account, better suited to some cases. It is always given in pills, in the dose of from two to five grains, either alone, or in conjunction with bark, assafœtida, or such articles.

* R. Rub. ferr. 3iss. cort. aurant. rad. gent. 2ā 3ss. vin. lusitan. lb ii. M. The vessel containing these ingredients is to be exposed to the sun, or near the fire, for three days, and to be repeatedly shaken during this time. This is a very superior preparation to the chalybeate wine, made agreeably to the direction of the dispensaries.

The phosphate of iron has lately been incorporated with the *materia medica*. It is active, and, in most of its properties, resembles the preceding preparation. To similar purposes it is therefore adapted, and is prescribed in nearly the same dose.

TINCTURA FERRI MURIATIS.

In point of activity, the muriate of iron exceeds most of its kindred preparations. It is now always employed as a tincture, and in the dose of from fifteen to thirty or forty drops. But in cases of great irritability of the stomach, not so much as even the smallest quantity mentioned, can be taken without exciting nausea or vomiting, and hence it is by no means a favourite medicine with practitioners. It is, however, sometimes prescribed in dyspepsia, and is beneficially used in certain cases of suppression of urine, from spasm.

CUPRUM.

Of the metallic tonics, copper next presents itself. This is not, like other metals, insipid and inodorous. It has, on the contrary, an unpleasant styptic taste, and when rubbed, emits a perceptible smell. Notwithstanding these sensible qualities, it has been held to be altogether inert, in its metallic state, except as a mechanical irritant. But it is obviously not so, as when a piece of it is swal-

lowed, it is acted upon by the gastric liquor, and a train of effects is produced, more or less violent, among which not the least conspicuous, is sometimes a pretty copious salivation.* As a medicine, however, it is never employed in this state. To convert it to our uses, it is subjected to certain chemical processes, by which several preparations are formed.

VITRIOLUM CÆRULEUM.

Of the blue vitriol or sulphate of copper, I have already in part treated, under the head of emetics. But it is applicable to some other purposes, which I am now to notice, and of these, perhaps the most important is to the cure of intermittents.

It has been used in these cases more particularly by Dr. James Adair, and Dr. Donald Monro, the latter of whom adopted the annexed formula.†

By this practice it appears, that he cured some intractable cases of the disease. On his authority, I have of late very much prescribed this medicine in protracted intermittents, and with such signal advantage that I am disposed to rate it very

* The late professor Barton was accustomed to relate the case of a child, who, having swallowed a cent, continued for some time, to discharge daily several pints of saliva.

† *B.* Vitriolum cæruleum gr. iv. extr. cort. peruv. gr. xxxii. syrup q. s. m. div. in pill. xvi. One of these pills he gave four times a day, and continued them for two weeks.

highly. To quartan agues it is especially adapted, so much so indeed, that I know not a remedy entitled to greater confidence. My mode of prescribing it is to commence with a fourth of a grain at a dose, united to a small portion of opium, to be repeated three or four times a day, gradually increasing the quantity.

From its great power in this case, I am inclined to suspect, that it is deserving of more attention than it has hitherto received in the diseases of a periodical recurrence. It would, at least, be well to try it fairly in epilepsy.

As an injection in gleet, a solution of blue vitriol answers better than any which I have used. It may be made in the proportion of two grains to the ounce of water. Of double this strength, it proves an incomparable wash in chancre, and still stronger, it is of all applications the most effectual, in the sloughing ulcers of the penis, whether venereal or otherwise. I have sometimes found it necessary in these cases, almost to saturate the solution, and with which the sore should be touched several times a day. This latter practice I learnt from my friend Dr. Washington of the navy, and have found it exceedingly successful.

CUPRUM AMMONIACUM.

By Cullen, and most other writers, this preparation is greatly preferred. It is milder in its opera-

tion, without being it is said at all inferior in point of efficacy. The cases to which it has hitherto been considered chiefly applicable, are some of the class of neuroses, as hysteria, chorea and epilepsy.

In the latter disease especially, it has no doubt very often done good. Cullen declares, that in many instances, it has cured epilepsy, though in others it does not succeed. By an Italian writer,* it is stated that he hardly ever failed of effecting cures of epilepsy with it, provided the disease was of the idiopathic species, and the system of the patient a *good deal exhausted*.

The latter part of this statement contains an important practical observation. The cuprum ammoniacum is a powerful stimulant, and hence requires, in order to the attainment of its beneficial effects, the reduction of action by previous depletion. This is a rule indeed, which I have endeavoured to enforce with respect to the employment of all the tonic and stimulant medicines in the nervous affections.

Our practice in these cases has always been destitute of principle, and on this account is distinguished by contrariety of opinion relative to the powers of our remedies, and by an opprobrious deficiency of success.

It has been my lot to witness the very extensive employment of this preparation of copper in epi-

* Dr. Ballo of Genoa.

lepsy. I have experimented with it myself, and seen it still more tried in public and private practice, in Europe, and in this country. The result of this large and diversified experience is, that, though in some instances, and particularly in children, it will protract to a more distant interval the recurrence of the paroxysms, it nevertheless has not, within my knowledge, accomplished one single cure. But let me not at the same time discourage its use. The medicine comes to us too strongly recommended to be hastily abandoned, and at all events, it is one of the means by which the disease may be mitigated or suspended.

In the exhibition of this preparation, it is prudent to commence with doses not exceeding a grain, though they may soon be considerably augmented. It is advised by Cullen to intermit the medicine after a month, lest the introduction of a large quantity of it into the system might, like lead, induce deleterious consequences. But I suspect there is no cause of solicitude on this subject. By myself, it has been continued for several months together, without the slightest mischief. The Italian writer, to whom I have alluded, gave in one case sixteen drachms in the whole, and Dr. Russel, in another, nine grains three times a day for a considerable period, and so far from doing harm, completely cured their patients.

The preparations of copper have also been prescribed in some of the cachexiae. This practice J.

am inclined to believe originated with Boerhaave, who reposed much confidence in its powers in dropsy. But there are not many traces of its having been imitated since his time. Copper, however, is a diuretic, and perhaps might be advantageously introduced into the treatment of that disease.

DISCOURSE LIII.

The subject continued.

ZINCUM.

In its metallic state, zinc exerts no very sensible action on the system. By combinations however several active preparations are produced, the first of which, is the oxid, or

FLORES ZINCI.

The flowers of zinc have not been a little celebrated in the nervous and spasmodic affections. This preparation is used very generally in this city, and I have the most authentic evidence of its having done good in epilepsy, and the analogous affections, especially chorea. Commonly, however, it is prescribed in too small a dose to be productive of the greatest advantage. It has, at least in my hands, been of little use, till the quantity was increased to fifteen or twenty grains, several times in the day. I have more than once given a drachm of it in the twenty-four hours. The only disagreeable effect from such a quantity is nausea, which, however, is not of a distressing nature. We

may safely commence with a dose of four or five grains.*

VITRIOLUM ALBUM.

This preparation is highly estimated, and liberally prescribed by many practitioners, in all the cases, which I have just enumerated. It would not be difficult to collect from the records of our public institutions, and the histories of private practice as well as from other sources, much conclusive evidence of its efficacy. I have myself, in chorea and epilepsy, resorted to it with advantage, though still I think it inferior to the oxid.

In treating of emetics, I remarked, that our medicine had been thought useful in whooping cough. It is not, however, by exciting vomiting, that it operates only, though, in this way, it is beneficial. It is also exhibited in small doses, with a view to its tonic and antispasmodic properties. This was the favourite practice of Dr. Saunders, who considered it as incomparably the most successful plan of managing the disease. It was also commended by the late Dr. Kuhn of this city.

That in some of the forms of asthma, the pre-

* Exactly this course I find to be recommended in a late English work of great merit, Bedingfield's Medical Practice. As regards myself, it is however known to be original, having publicly taught and employed the practice long before the appearance of this work.

parations of zinc might be of service, it is reasonable to presume. But I have here no satisfactory experience with it, and I do not know that it has been tried by any one except myself.

As an injection in gonorrhœa, and gleet, and as a collyrium, its utility is sufficiently known. Employed as an injection in recent gonorrhœa, it may be either alone, or united with the *sacch. saturni* in equal portions.*

In gleet, however, the solution may be nearly double as strong, or what I think answers still better, is to add a small portion of corrosive sublimate.†

As a collyrium, there should not be more than one grain of zinc to the ounce of water, or, if it can be had, rose water.‡

* *R.* Vitriol. alb. gr. x. gum. arab. 3ii. tinct. theb. 3i. aq. font. 3viii.

† *R.* Vitriol. alb. gr. x. corros. sub. gr. ii. aq. font. 3viii.

‡ Of the acetate of zinc, I have not much to say. It has only been employed within a few years. As an emetic, it is said to operate actively and very promptly, in the dose of five or six grains, and seems to be adapted to all the purposes for which the sulphate is proposed.

By some of the English practitioners it has been highly extolled, as an injection in gonorrhœa, being preferable to the sulphate, as exciting less pain and irritation.

Having abandoned altogether the treatment of this complaint by injections, I have no experience with this remedy. But it is used by some of my medical friends, who corroborate all that has been reported of its efficacy. It is to be employed in the same quantity, and in like manner, as the white vitriol. The fact, indeed, is that in

BISMUTHUM.

The only preparation of this metal which has been introduced into practice is the oxid, or as some of the chemists believe it to be, the sub-nitrate. To Dr. Odier of Geneva, we are indebted for this acquisition to the *materia medica*. It appears, that so early as the year 1786, he published a paper on the subject, in which the attention of physicians was solicited to the powers of the medicine, in several of the affections of the stomach. But prejudices arising against this mineral, which have since been proved to be wholly unfounded, prevented it gaining ground, as a remedy, on the continent of Europe. The first notice of its being employed in Britain, is in the *Medical and Physical Journal*, for July 1799. It is mentioned by the editors of that work as a medicine either neglected or forgotten, “though, say they, it is stated to be a powerful remedy in spasmodic pain of the stomach and bowels, particularly if it arise from organic debility, or a relaxed and emaciated constitution.” But to Dr. Marcet, a very distinguished practitioner in London, the credit is certainly due of reviving this medicine, and perhaps of establishing

the common formula, where the white vitriol and sugar of lead are united, we have, from the chemical action which takes place, an acetate of zinc.

its reputation. In a paper which he has published relative to its use, he says, "I have had frequent opportunities in Guy's Hospital of trying the oxid of bismuth, in spasmodic affections of the stomach, and those trials have fully confirmed the opinion, which I formerly gave of its great utility." Confidence in the medicine being thus inspired, it crept soon into general use, and the most ample evidence was collected in confirmation of the preceding statement of its efficacy. Nor perhaps has less been done with it in the United States. It has been very extensively employed, by the most eminent physicians of New-York, who concur in reporting very favourably of its powers, in all the affections connected with dyspepsia, as gastrodynia, cardialgia, pyrosis, and in the depraved state of the stomach which is incident to pregnancy.

In Boston, it is also a remedy, in which much confidence seems to be placed. The editors of the New-England Medical Journal, who are highly respectable, thus express their opinion of its utility.

"The action of this substance on the stomach is that of a mild and effectual tonic, and from our own experience of its virtues, we do not hesitate to affirm with Odier, Marcket, Bardsley, and Moore, that in pyrosis, cardialgia, and more particularly gastrodynia, it operates more speedily, and with more certainty, than any other article of the *materia medica*."

As yet, I do not understand that bismuth has

been much employed in this city. I have tried it in several of the gastric affections, to which it is considered most applicable, and I confess that my expectations have been disappointed. But my confidence has not, on this account, altogether ceased in the remedy. No cases are more difficult to cure than those to which I have alluded, and none in which the powers of medicine are so often baffled and counteracted, by the neglect of the regulations as to diet, and other circumstances, the strict observance of which, is indispensable to success.

Bismuth is a safe and active medicine, and therefore has strong claims to our attention, independently of the weight of evidence which has already been collected in its favour. It is usual to exhibit it in the dose of five or six grains twice or thrice a day, mixed in any convenient vehicle, such as sugar, or gum arabic, or, it may be made into the pills, which is perhaps the preferable mode.*

ARGENTUM.

This metal is distinguished among other circumstances by an insusceptibility to oxidation. But the acids which readily yield oxygen, act upon it,

* Bismuth, I have learnt, has been much used of late in the treatment of intermittents, and with success.

and speedily dissolve it, particularly the nitric acid, which is commonly employed. The solution when evaporated affords the nitrate of silver, which being again dissolved and cast in moulds, forms lunar caustic.

Nitrate of silver is the only preparation of the metal which is employed internally. It appears, that even in very early times it was exhibited, and that the harshness of its operation led to its disuse. To Dr. Simms of London, we owe its re-introduction into the *materia medica*, who, some years ago, was induced to apply it to the treatment of epilepsy, and, as he informs us, with great advantage, having cured several cases by it. Not long afterwards, he was followed by Drs. Cappe, Bostoch, Wilson, M'Ginnis, and some other practitioners, who also boasted of their success in the same disease.

In this city, it has been sufficiently tried, both in private and public practice, as well by other physicians as myself, and I am inclined to believe, that our decision would not be very strongly in its favour. If it be admitted to palliate symptoms, or to protract the return of the paroxysms, I suspect that this is the extent of what could be said of its effects.

In the kindred affection of chorea, our medicine is also alleged to have been productive of service, and I have reason to credit the fact. It is particularly extolled by Dr. Powell of London,

a practitioner of deservedly high reputation. In the treatment of that terrible disease, angina pectoris, the nitrate of silver has lately been used, and a case of a complete cure by it, is reported, on the authority of Dr. Cappe, of one of the provincial towns of England.

Upon the whole, I think this article merits some attention, though the evidence of its efficacy is still very dubious and unsatisfactory. It is given in the dose of half a grain at first, and gradually increased so as to amount to ten or twelve grains a day, it being previously dissolved in water, and then worked up into pills, with the crumb of soft bread.*

AURUM.

As long ago as the time of the alchymists, this metal was supposed to be possessed of medicinal properties, and was actually employed, though soon afterwards it came to be expunged from the

* Perhaps we do injustice to this medicine by giving it in too small doses. By Dr. Powell, to whom I have just alluded, who is said to employ it with signal advantage in most of the nervous affections, from two to five grains are given every six hours. In one case of epilepsy, I gradually augmented the dose to eighteen grains in the twenty-four hours without producing any troublesome effect. Even, however, in this large quantity, it did not cure the disease.

Of late, however, the periodical journals of England, contain some cases where the skin assumed a permanent livid hue, by the continued use of this article in large doses, which, perhaps, ought to create some degree of caution with regard to its employment.

materia medica, as being either hurtful to the system, or inefficacious. It is again, however, brought forward, as a powerful remedy, in the management of several diseases. In a publication by Dr. Chritien of Montpelier, which appeared some years ago, its powers are extolled with all the extravagance of enthusiasm. It appears according to him, that gold may be employed in the state:

1. Of minute division.
2. Of oxide.
3. Of oxide in combination with ammonia.
4. Of oxide in combination with the oxide of tin.
5. Of muriate.

Numerous detailed cases are reported of the effects of each of these preparations, though they differ very much in activity, the oxides producing more speedy effects than the powdered gold, and the muriate a more powerful action than the oxides. They were all administered by friction on the tongue, cheeks, or gums. The first was prescribed to the extent of three grains a day: The second in the dose of half a grain, gradually increased to one or two grains: The third and fourth in rather smaller quantities, and the fifth from one-tenth to one-fifteenth of a grain.

From the evidence which the author has furnished us, we may collect, that within a very short

time, these medicines cure chancre, warts, secondary ulcers, sore throats, and other forms of inveterate lues, and that likewise, they are of the greatest utility in the affections of the uterus, of the stomach, and in glandular, and lymphatic complaints.

If it should really prove to be true, that these articles are endowed with such properties, they will be an invaluable acquisition to the stock of our remedies, as it appears that they effect the most radical cures of syphilis, without producing salivation, or any derangement of the functions of the body, and that no season, no temperament, and no complication of the disease, can create any obstacle to their exhibition, or detract in the slightest degree from their efficacy.

But of this I am entirely distrustful, and have indeed learnt, that, on trial by the British practitioners, no part of the preceding statement was substantiated.

ARSENICUM.

In its metallic state, arsenic is inert. But at a high degree of temperature it is oxidated rapidly, forming a white vapour, which condenses. This product used to be regarded as an oxide, though of late it is more generally believed to be an acid, and is called the arsenous acid. But, whatever may be its precise nature, whether an oxid or a

weak acid, this is the substance which is generally employed as a medicine.

In the course of the last twenty years, our medicine has been very extensively employed in the treatment of diseases. But it is in intermittent fever, that its efficacy is best ascertained, and perhaps most highly appreciated.

That it has been advantageously used in such cases, I am not at all disposed to deny, though I must still say, that its powers are very much overrated, and that whoever expects any great uniformity of success from it, will often, very often, be disappointed. Whether these failures proceed from intrinsic deficiency in the powers of the remedy, or from the very loose and indiscriminate manner in which it is applied, I am not prepared to decide.

So much however I may state, that in all the weak forms of intermittent fever, either approaching to typhus, or associated with a cachectic condition of the system, arsenic will prove inefficient, and most generally mischievous. This might indeed be anticipated from its acknowledged effects on the system. The bark, as well as most other substances employed in intermittents, seems to operate more or less by imparting tone to the stomach, and through it to the system. But arsenic, though placed with the tonics, has no one property of this class of articles, and produces diametrically opposite effects.

During its immediate action, there is more or less of nausea and lassitude, and among its remoter consequences, many of the symptoms of extreme debility, and depravation of the system, such as œdematos swellings of the face and extremities, cold and pallid surface, reduced pulse, nervous tremors, with a very considerable exhaustion of muscular power. It would hence appear to be wholly inapplicable to the cases of debility, and in further confirmation of this fact, I can state, that with the patients of the Alms House, who are nearly all of this description, either from age, or intemperance, it has invariably failed in my hands.

But even when judiciously administered, and under circumstances the most propitious, it will not cure the disease. Compared with the Peruvian bark, it is decidedly inferior, and I think ought rarely to be prescribed to the exclusion of that article. Cases however may arise in which we shall be warranted in having recourse to it, and especially in children, to whom it is infinitely better suited on many accounts.

Doubts have been expressed, whether the use of the article should be limited to the intermission, or continued during the successive stages of the paroxysm. My own impression is, that no rule need be strictly adhered to on this subject. The only objection to the continuance of the medicine throughout the fit, which I have observed, is,

that it is apt to nauseate and distress the stomach, which at this time, is very irritable.

It is now a fact pretty well authenticated, that in some instances where arsenic has totally failed by itself, cures have been accomplished by combining the bark with it. By some indeed, it has been contended, that the one medicine prepares the system for the operation of the other, like a mercurial course, and that it will be found useful, in all very refractory cases of ague and fever, to precede the bark by a temporary exhibition of arsenic.

Of this I have no knowledge myself, though the observation seems to me to be entitled to some respect. As might be supposed, arsenic is used in remittent and continued fevers, where there is a tendency in the case to give way, and is probably sometimes useful in hectic fever.

Even in the phlegmasiae it is prescribed. During my attendance on the London hospitals it was a favourite remedy in rheumatism, and it is certainly much commended, in the same cases, by several practitioners of this city.

Commonly it is considered as best adapted to acute rheumatism accompanied with pain and inflammation. But surely no one ought to trust here to arsenic, who could command the depleting remedies. In chronic rheumatism of a moderate degree of action, it obviously promises more. But even in this case, it ought not to supersede medicines, the efficacy of which is so much better established.

Nevertheless, I have sometimes used it under such circumstances, not without advantage, and especially where, as by no means rarely happens, the case is marked by the intermittent type.

Of the class of neuroses, there are some diseases in which our medicine has evinced considerable powers. It is said to have done good in epilepsy, chorea and tetanus. Exhibited very freely in the latter disease, in conjunction with laudanum, it has cured several cases, if the testimony of a highly respectable practitioner can be credited.*

To some of the forms of asthma arsenic would seem to be appropriate. I once gave it, in large doses, in a singularly intractable case of spasmodic asthma, with apparent advantage. Paroxysms, which recurred almost every ten or fifteen days, were suspended for upwards of nine weeks. But what finally became of the case I do not know. It is said, that in angina pectoris, an affection not wholly dissimilar to asthma, arsenic has been found useful, and especially in one case which was cured by its long and persevering employment.† To these may be added the spasmodic affections generally, though more particularly of a periodical nature, as tic douloureux, cephalalgia, &c.

By those who have insisted on the analogy be-

* I state this fact on the authority of Dr. Taylor, a graduate of this university. The prescription consisted of ten drops of Fowler's solution, and fifty of laudanum, every third hour.

† By Dr. Cappe, of York.

tween arsenic and mercury, it is strenuously urged in glandular obstructions, as of the spleen, the liver, &c. But if ever productive of advantage here, of which I greatly doubt, it is probably in those cases which have been produced or are kept up by intermittent fever.

Of the use of arsenic in cancer, I have little or no personal experience, and though this was among the very earliest applications of the medicine, the degree of its utility is by no means determined. As, however, this article has constituted the basis of almost all the popular remedies for cancer, it is presumable that, at least, it is possessed of some peculiar powers, in the healing of obstinate ulcers. It is administered internally, while at the same time, it is applied locally to the sore, in the mode described under the head of escharotics.

Arsenic is one of those medicines which have long been known to have a relation to the surface of the body, and it has accordingly been habitually employed in the eruptions of the skin, from leprosy down to the lowest species of herpes. Alone, or with cicuta, which I am convinced enhances its properties, I have often prescribed it in these affections, and sometimes with great success.

These are the chief diseases in which arsenic is prescribed. It would have been easy for me to have swelled the catalogue to any extent. But I am wholly incredulous as to the sanguine representa-

tions which have been made, from time to time, relative to its extraordinary powers. I have tried this article in a very wide circle of cases, and generally with so little advantage that my confidence in it has decreased, and is daily decreasing. The more I see of its use, the greater is my distrust of its powers. But very recently, I have given it in the mercurial disease, and was pleased with the effect. As yet, however, my trials in this case have been too few, to allow me to speak of it in any confident tone.

Arsenic is prescribed in several forms, the most popular however of which, at present, is that denominated Fowler's solution, or the liquor arsenicalis of the London college. It is the arsenite of potash, and is given in the dose of five drops two or three times a day, gradually increased till nausea, œdematosus swellings, &c. take place.

The arseniate of potash is a second preparation, which differs from the preceding among other respects in being a crystallized salt. It has the sanction of the Dublin college, and is a good deal used in the dose of a sixth or eighth of a grain. By some practitioners, the oxid, or acid, as it may be, is preferred in the solid state, made into pills. The dose is exactly the same as the preceding preparation. It was thought by Darwin, however, that a still better mode is a solution of the oxid in water, which he made by boiling more than a saturated solution for half an hour, letting

it subside, and then filtering through paper, of which eight or ten drops are the quantity to be taken at once.

My own conviction is, that there is no great superiority in any one of these preparations. They are all sufficiently active, and may be exhibited with nearly equal convenience. The fluid preparations are however safest, as being susceptible of a more accurate division.

DISCOURSE LIV.

Of Astringents.

THESE I shall dispose of as derived from the vegetable and mineral kingdom. The property of astringency is very widely diffused among plants, the number being almost infinite which possess it in a greater or less degree. But in what it consists has long been a matter of controversy, and is still scarcely determined with absolute precision.

As a peculiar acid can be traced in all the more active astringents, termed gallic, from its abounding most in galls, it was for a time very generally ascribed to this principle. But in the progress of more accurate inquiries into the subject, it was ascertained that this could not be it, since, other objections apart, the acid itself, in a separate state, has no such property. Aware of this difficulty, the late professor Woodhouse, who investigated this point with his usual industry, was led to the conclusion, that the acid exists in this case combined with alum, forming a gallete of alumine. But this has been proved to be not less erroneous. The later researches of Seguin have brought into view another principle of vegetable composition, which, as giving to astringents the property of tanning, is denominated tannin. That

this is the principle of astringency seems to rest on pretty solid grounds, and is now generally admitted. Tannin is styptic in taste, has the power of corrugation, and is universally met with in vegetable astringents, circumstances which sufficiently support the hypothesis.

CORTEX QUERCI.

I shall commence with an account of the bark of the different oaks. That of the English oak, or the *quercus robur*, has been a good deal employed, and is certainly calculated to fulfil many of the indications for which this description of articles is prescribed.

Exhibited in the dose of half a drachm, every two or three hours, it is said by Cullen and other writers to suspend, with tolerable certainty, the paroxysms of intermittent fever. In the same quantity, it has been found useful in hæmorrhage, of feeble action, in diarrhœa, and in the last stages of dysentery. As a gargle in sore throat, or as an injection in leucorrhœa, or, as a wash, in hæmorrhoidal tumors, or in prolapsus of the anus or uterus owing to relaxation, it is much more employed.

Several species of our native oak do not appear to be at all inferior to the foreign, and are resorted to under similar circumstances. Of these, the white oak most nearly resembles the English in

its properties. The bark of the Spanish oak, however, is more generally used in the United States, and has acquired no little reputation in the cure of ague and fever, in gangrene, and a variety of other cases. But by some practitioners the bark of the chesnut oak is preferred. It seems to be admitted that the bark of the black oak is less valuable than any of the rest, and is very apt, from the greater quantity of extractive matter which it contains, to purge and even to run off copiously by the bowels.

As internal medicines, I have not the slightest experience with the bark of any one species of the American oaks. But I have no doubt of their possessing powers sufficiently active to entitle them to attention, though at the same time, I repose no confidence in those representations which would place them above, or even on a footing with the Peruvian bark.

QUERCUS CERRIS.

These tubercular productions are caused by the bark, or leaves of the oak, being piercéd by an insect of the genus *cynips*, resembling the common gnat. The sap or juice escaping through this puncture is inspissated, and gradually hardens into the knotty substances, which we denominate galls.

Being mere excrescences, they have all the qualities of the tree from which they are formed.

The most active are imported from Aleppo, and are the product of the eastern section of Europe. Those, however, of our own country, are by no means deficient in activity.

As possessed in a very eminent degree, of the principle of astringency, galls are used in many of the cases in which such medicines are prescribed. But they are thought more particularly adapted to chronic diarrhoea of long standing, produced, or kept up, by debility, or to restrain the colliquative purgings incident to the last stages of pulmonary, and other affections. It is customary, under such circumstances, to give them in simple infusion, or in powder, in the dose of half an ounce of the former, or of ten or twenty grains of the latter preparation. But their power is very considerably improved, by adding to the infusion, the prepared chalk, with laudanum.*

Externally, they are used as an ointment in haemorrhoidal tumours, and with great success, where inflammation is previously reduced. To be of much service, however, the ointment should be made considerably stronger than usually is done. As directed by me, it generally contains three parts of lard, and two of finely powdered galls.

When the tumours are seated so far up the rectum,

* B. Gall. infus. $\frac{7}{3}$ iv. cret. prep. $\frac{3}{2}$ ii. tinct. theb. gr. xl.
M. The dose is a table spoonful.

as to prevent an application of the ointment, a strong infusion of the galls may be injected several times a day, and in the prolapsus of the uterus, and of the rectum, this same preparation will prove equally beneficial as a wash. Nor has less been said of its utility in gonorrhœa, in gleet, and leucorrhœa, or as a gargle in weak states of the throat. By Swediaur, who is among the most experienced practitioners of Europe, in the two former complaints, galls are very highly extolled as an injection.

KINO.

The substance distinguished by this name, was introduced about half a century ago into the *materia medica*, as a powerful astringent, little being known with regard to its origin, except that it came from Africa, and was most probably the exudation of some plant.

Even at the present moment this point is not satisfactorily determined.* The prevailing opinion seems to be that, whatever may have been the source of the primitive kino, that, which is now found in the shops, is made from various

* It is stated by the Edinburgh college to be the product of a tree of New Holland, the *eucalyptus resinifera*, whereas the Dublin College ascribe it, on the authority of Roxburgh, to the *butea frondosa*. It is said by Duncan to be afforded by the *coecoloba uvifera*. Of late, it has been conjectured that there are several species of the article, which may be produced from different trees.

astringent vegetable substances. It is, however, occasionally to be met with in a state of purity, and then, has a very different appearance from the factitious preparation.

That which is the natural product comes in much larger masses, is intermixed with the bark and fibres of the plant, is of a less brittle texture, and united to its astringency has a maukish sweetish flavour, while the fabricated species looks like a common resinous extract, purified and dried, is of a smoother and much darker surface, and has a taste blended of astringency and bitterness.

Among those that most early employed our medicine was Dr. John Fothergill, who alleges that he gave it in intermittent fever of the most obstinate character with great success, so much so indeed, that he effected cures by it in cases, which resisted the Peruvian bark. In the practice of this city, the kino is a good deal prescribed. I have used it myself, and seen it still more used in ague and fever. By itself, I have no idea that it is competent to contend against this disease. But in conjunction with some of the more active bitters, and opium, it will occasionally evince considerable powers.* It was also prescribed by him in menorrhagia, and we are informed by another high

* B. G. kino 3*ii.* rad. gent. 3 ss gum. opii gr. *ii.* M. div. in pulv. *xii.* One to be taken every two hours during the interval of the paroxysms.

authority, that it is exceedingly useful in the hemorrhages which follow parturition.

Of late our medicine has acquired some character in diabetes, and in several of the affections of the stomach, and particularly in pyrosis. It is here recommended in the strongest terms by Pemberton in his excellent treatise on the diseases of the viscera.*

It is, I suspect, by restoring the stomach to a sound condition, that kino proves beneficial in diabetes, more or less disorder of the gastric functions being always associated with that disease.

The most common application, however, of our medicine, at present, is, to diarrhoea, and to certain states of dysentery. To restrain purging under any circumstances, I am not acquainted with any article more serviceable. Many practitioners prefer giving it here simply in a watery solution, but, I think it succeeds better in tincture, conjoined with prepared chalk and laudanum.† As an injection in gonorrhœa, kino is directed by Mr. Bell‡ of which I cannot speak from any experience of my own, though I presume, that it

* ℞ Gum. kino gr. x. gum opii. gr. i. mucil. g. arab. gr. v. ft. pill. ii. Of which, take one every four hours.

† ℞ Tinct. kino. cret. prep. āā ʒiv . tinct. theb. gr. xi. aq. font. ʒiv . M. A table spoonful every two or three hours.

‡ ℞ Pulv. kino. ʒii . pulv. alum. ʒi . mucil. g. arab. ʒi . aq. font. ʒbi . M. et collat.

would be better adapted to gleet than to the acute states of the complaint.

It is somewhat curious, and deserves to be recollectcd, that kino combined with colombo, constitutes a pretty certain and powerful purgative. I do not know that this fact has been before noticed, but I have observed it too frequently, to doubt its correctness. It is one of the anomalies produced by the combinations of medicines.

MIMOSA CATECHU.

Catechu, or *terra japonica*, as it was formerly called, is an extract from a species of the sensitive plant. It is an active astringent, containing, according to chemical analysis, more of this principle than any other substance, and is employed in nearly all the cases to which the preceding article is deemed applicable.

The powder sprinkled on chronic ulcers, and especially of a venereal nature, such as ulcerated bubo, is highly commended by the surgical writers, and I have found it useful.

Catechu may be given in substance, in the dose of ten or twenty grains, or in tincture, or watery solution. It is often combined with kino advantageously.

HÆMATOXYLON CAMPECHIANUM.

As an astringent logwood is prescribed. It is of a deep red colour, and is much used also as a dye. But at the same time, it is by no means deficient in medicinal virtues. As a decoction, or infusion, it has proved conspicuously beneficial in chronic dysentery, in diarrhœa, and above all in the declining stages of cholera infantum. It is in this latter complaint, that it is chiefly prescribed by our practitioners. The infusion is best suited to the cases of children, of which, a table spoonful repeated every two or three hours is the proper dose. The extract of logwood has been proposed as a substitute for kino.

VISCUM.

Of the mistletoe, once so celebrated, I have not much to say. It is known as a parasitical plant, growing on different trees; as the oak, the apple, and more particularly the gums of our country. But whatever may be the source of its nourishment, its properties are precisely the same. It affords, therefore, an additional proof of the great power, which vegetables, in common with animals, possess, of digestion and assimilation, through their absorbent apparatus.

The mistletoe is a pretty active astringent, and

was formerly much trusted in the treatment of epilepsy, and analogous diseases, of which we have many cases of cures having been accomplished by it, and besides which, it is reputed to have proved serviceable in quartan agues. I know nothing of it myself, and am disposed to think it has been very much overrated. It is, however, an interesting article as connected with the ancient superstition of the druids, and perhaps still more as an object of natural history.

Being so abundant in the United States, it is worthy of trial in several diseases, and especially in nephritis, a case in which it is said to have done good. The virtues of the plant are resident chiefly in the bark, which may be given in powder, in the dose of forty or fifty grains.

GERANIUM MACULATUM.

This plant, called spotted geranium, or crowfoot, grows in the neighbourhood of this city. It is also to be found in other sections of the United States. By its sensible qualities, as well as from its effects on the system, this species of geranium seems to be highly astringent, and promises to become hereafter an important acquisition to the stock of our remedies. As a styptic, a strong decoction of it has been found active, and is much used for this purpose, in many parts of the country. It is also

prescribed in internal hæmorrhages, and especially those of the alimentary canal.

To diarrhœa, and the chronic stages of dysentery, and cholera infantum, it is moreover known to be adapted. It is stated further, on good authority, that some of the Indian tribes rely on this article almost exclusively in the cure of the venereal disease. But I do not know to what form of the disease they apply it. Judging from its general properties, we should suppose that it might be useful as an injection in gonorrhœa and gleet. It appears, however, that they use it as a beverage. Even in this way, it may be serviceable in these complaints, as they frequently submit to astringents and other general remedies. Confessedly, the medicine has done good in nephritis, and I have always remarked, that those articles which operate on the kidneys extend their impressions, more or less, over the whole of the urinary and genital organs. The virtues of the plant are in the root, which as an internal medicine, in the bowel affections especially, is prepared by being boiled in milk.

PRINOS VERTICILLATUS.

The black alder is another of our indigenous astringents deserving of some notice. This shrub is well known. It grows almost in every section

of the United States, and delights in a damp, marshy soil.

The bark as well as the berries, is decidedly astringent, and the latter put into wine or spirits form an elegant tincture. The bark itself may be used either in substance or decoction. It is said to cure intermittent fever, and is also successfully administered in the incipient stages of gangrene, as a substitute for Peruvian bark. But in these cases I know nothing of its powers. The only application which I have ever made of the medicine has been to the cure of the chronic cutaneous affections. Exhibited as a weak decoction or infusion, and steadily persevered in for some weeks, it will often remove the different species of herpes.

RUBUS PROCUMBENS

ET

RUBUS VILLOSUS.

The first of these is the dew berry, and the second the black berry. Both of these plants are so well known, that it would be superfluous in me to say any thing of their natural history.

In popular practice, each of them has long been used as an astringent in the bowel affections. The knowledge of the fact induced me some years ago to try them in these cases, and I was so exceedingly pleased with the result, that I

have since very liberally prescribed them. Every part of the plant is actively astringent, as the root, the leaves, and the bark, and may be employed. But the root is to be preferred. The mode in which I have used it is in decoction, taking about an ounce of it bruised to a pint of water. Thus prepared, we have a beautiful claret coloured liquor, having its bitterness, which is not very great, tempered by a pleasant aromatic flavour.

Of the vegetable astringents this, I have reason to believe, is among the most active and decidedly efficacious in certain cases.

To the declining stages of dysentery, after the symptoms of active inflammation are removed, it is well suited, though I have given it, I think, with greater advantage, under nearly similar circumstances, in cholera infantum. To check the inordinate evacuations which commonly attend the protracted cases of this disease, no remedy has ever done so much in my hands. Even two or three doses will sometimes so bind the bowels, that purgatives become necessary.

Being so powerfully astringent, this medicine is useful in all excessive purgings, from whatever cause proceeding, and especially in the diarrhoea of very old people, as well as when it occurs at the close of diseases. During my attendance in our public institutions I had abundant opportunities of testing its efficacy in these cases.

As yet, my experience with this article is limited pretty much to the cases which I have mentioned. But I cannot help believing, that it will hereafter be found to be susceptible of a more diversified application, and perhaps, under all circumstances, where an agreeable bitter tonic, or astringent, is demanded. As an antilithic, and, indeed, as a corrective of all the depraved states of the stomach caused by debility, I am fully persuaded that it will display very valuable powers.

Of the comparative utility of the dew and black berry, I am hardly entitled to decide very confidently. My impression however is, from what I have observed of their effects, that the former is the superior medicine in every respect. Certain it is, that it is more pleasant to the taste.

It would be easy, very much to enlarge the catalogue of indigenous astringents, our forests and fields being redundant with articles of this description. But their properties have been imperfectly examined, and I know nothing of their medicinal applications myself.

DISCOURSE LV.

Of Mineral Astringents.

PLUMBUM.

THE preparations of lead are various. But I shall confine my observations to those only which are produced by a combination with the acetic acid. Two of this kind exist. The first, which is the *saccharum saturni* of the old nomenclature, is a super acetate of lead. Of late, this has become a very important internal remedy, in the estimation of many practitioners.

Among the earliest applications of it, was to the cure of intermittent fever, and we are not without some authority in its favour. Distinct from other facts, we are told that during the late war it was resorted to with much advantage by some of the physicians of our army. It is stated, that in many instances, it proved superior even to the arsenic or Peruvian bark, in the management of the more refractory instances of ague and fever. But these accounts, I suspect, are exaggerated, and should be received with doubt and hesitation. My experience with the lead in intermittent fever is not great, though I have tried it sufficiently to per-

suade me, that, if ever it does good, it is rarely, and deserves to be placed among the most precarious of our remedies.

To treat hæmorrhages by this preparation of lead is an old practice. It was common in Europe, and was recommended even by one or two of the early writers of this country. But in consequence of certain publications which appeared from Sir G. Baker, and other distinguished men of England, pointing out, in the strongest terms, the danger of the remedy, a sort of panic terror seized upon physicians, and it was generally abandoned.

To the late professor Barton, the credit is undoubtedly due of dissipating these idle alarms, and for having fully re-established confidence in the safety and efficacy of the practice, at least among us.

In every species of hæmorrhage, whether active or passive, and from whatever part of the body proceeding, the lead has been found useful, according to the reports of different practitioners. Nothing, however, is more certain, than that the use of the medicine ought always to be preceded by copious venesection, where fulness and activity of pulse exist. This precept applies with particular force to the case of hæmoptysis. If venesection be not here practised, the lead will prove inefficient, and sometimes even mischievous. Nor will a single bleeding always suffice. The rule under

such circumstances is to deplete so long as there is increased vigour in the circulation.

Lead, however, has been infinitely more celebrated in uterine than in any other hæmorrhage. But to be advantageously prescribed here, the cases must be properly discriminated. These hæmorrhages may precede or follow delivery, though in either event, if the flow be copious, the medicine will prove wholly inadequate to the emergency, as such is the magnitude of the arteries of the gravid uterus, that hæmorrhages can only be checked by the obliteration of the mouth of the vessels, through the contractions of the uterus itself.

Often, in the course of a very few minutes, were these floodings not arrested, death must be the consequence. On the treatment of them in detail, it would be improper for me to enter. I shall indeed merely remark, that if they come on, in an alarming manner, prior to delivery, the child and secundines are as promptly as possible to be removed, and then cold applications applied over the whole extent of the abdomen. The lead, under such circumstances, I repeat would be altogether unavailing. This medicine is applicable only to the moderate degree of hæmorrhage, which sometimes precedes miscarriage, or is incident occasionally to regular parturition, from a partial detachment of the placenta.

But to hæmorrhages which take place in the

unimpregnated state of the uterus, it is still better adapted. These it hardly ever fails of relieving, when boldly and judiciously administered, and such indeed will be found to be the case in all the ordinary hæmorrhages. By Heberden, it is said that if ever there was a remedy which deserves to be considered as a specific in any disease, it is surely the *saccharum saturni* uterine in hæmorrhage. My experience, will not allow me to go quite so far in praise of the medicine, though I am prepared to concur in a very high eulogium on its powers in these affections.

To the complaints of the alimentary canal, acute as well as chronic, lead has been considered by some as well suited. As an astringent, it is said to be serviceable in dyspepsia, and more particularly in pyrosis.

Exhibited with the same view, it is probably productive of greater advantage, in dysentery, cholera infantum, and diarrhoea, in each of which cases it has been very liberally prescribed in this city, and in other parts of the United States. It would indeed be no difficult task to collect very respectable testimony to its decisive efficacy in these bowel affections. But judging from what I have seen myself, I should say, without hesitation, that we have many articles so incomparably superior, that to resort to it, in preference to them, under such circumstances, would be criminally to tamper with the health, and perhaps the life of a patient.

As part of the treatment of some of the cases of neuroses, our medicine has acquired no inconsiderable reputation. During the last ten or fifteen years, it has been very fairly tried in the public and private practice of this city in epilepsy, and though in some cases of the disease occurring in children, it manifestly mitigated the paroxysms, it has never, so far as I have been able to learn, effected one solitary cure. To chronic affections like epilepsy, the lead does not seem to be appropriate, as they require, for their removal, the steady continuance of a course of treatment for a period longer than, perhaps, as respects this article, it is safe to do.

Experiments have also been made with lead in chorea, and I am inclined to believe with nearly the same results.

To the treatment of tetanus, lead, has not, so far, as I know, been hitherto applied. Its applicability, however, to this affection was long ago suggested by Mr. Hunter, and since arsenic, an article which resembles lead in many of its properties, appears on pretty authentic evidence to have cured some cases of the disease, it might perhaps be useful. But to be so, under such circumstances, it should be given in very large doses, combined with the free exhibition of laudanum, and other auxiliary means.

Much of late has been alleged, as to the powers of our medicine in pertussis. By some of the English writers, it is described as almost an infalli-

ble remedy in this obstinate disease. When I first received this information, I employed the article in several cases, and could not perceive any very sensible effect from it. Notwithstanding, therefore, what is affirmed in its favour, I cannot help placing it very low, among the remedies in whooping cough.

Confiding however at one time, in the reports of the efficacy of lead in the disease, I was induced from analogy to try it in several cases of asthma. But the result of my experiments was not at all satisfactory, the slightest impression, so far as I was able to observe, not having been made on any one case.

In union with camphor, lead has been prescribed in several of the forms of mania, and it is said with some effect. But as this prescription is a compound one, embracing so very active an ingredient as camphor, the evidence to the efficacy of the lead is too ambiguous to be trusted.

As an injection in gonorrhœa, a solution of saccharum saturni, in the proportion of two or three grains to the ounce of water, is a very popular remedy. Diluted still more, this solution forms a safe and efficacious collyrium, and rendered stronger, is usefully applied in superficial inflammations, and a saturated solution mixed with one-

third of vinegar, or brandy, proves among the most active of our discutients.*

In the employment of lead, there is one mode which I have found applicable to most cases. It is, to give about two grains of it, with a quarter of a grain of opium, made into a pill, as often as circumstances may seem to demand. But to hæmorrhage, and especially where it is profuse, it will be necessary to repeat the dose very frequently, and even to enlarge it considerably. During the twenty-four hours, I have given as much as half a drachm of lead without experiencing from it any unpleasant effects. Perhaps, we prescribe this medicine in too minute doses. What would be the effect of exhibiting ten grains or a scruple of it at once, it is not easy to determine. But I do really believe it might be safely done, and if so, the most beneficial consequences would probably result from it in copious hæmorrhages.

Two drachms of the medicine I have known to be taken at once by mistake, and the only effect was pretty active purging. As in the case of calomel, and some other articles, perhaps we shall find that the immediate irritation, as well as permanent operation of lead, is greater from a small, than a large dose.

* Goulard's extract, though differing from the preceding preparation in its chemical composition, being a true acetate of lead, is precisely similar in its effects, and is employed for the same external purposes, in a state of dilution.

ARGILLA.

THIS earth in a pure state is without activity. But all its saline combinations are more or less possessed of an astringent property. The sulphate of alumine* however is the preparation almost exclusively employed as an internal medicine, and it is this which I shall only notice.

Alum, as it is commonly called, has been well spoken of by respectable authorities in intermittent fever. Cullen gave it in combination with nutmeg. But he says, that it proved so irritating to the stomach as not to be a desirable medicine. It is, on the contrary, asserted by Lind to be, when used in this way, the most efficacious remedy he ever tried, except the Peruvian bark. To reconcile such conflicting reports is not very easy. My own experience enables me to advance no opinion on the subject, though I confess, I have little confidence in the medicine in these cases. Nevertheless, it appears that alum is possessed of some febrifuge powers. It was recommended by Chalmers, in the bilious fevers of South Carolina, and under similar circumstances, is favourably mentioned by Adair. The latter directs it in union with canella alba and bark. By Darwin it is supposed

* I believe the chemists of the present day consider it as a super sulphate of alumine and potash.

to be better adapted to fever, connected with intestinal disease.' To the chronic affections of the bowels, it is certainly applicable. Exhibited in minute doses, it has rendered service in some of the cases of protracted dysentery, in diarrhoea, and especially cholera infantum. It is here usually given in solution, with laudahum, gum arabic, and sugar, and if these ingredients be well put together, the mixture is not unpleasant.

To restrain other discharges alum is also much prescribed. Combined with bark, it is said often to do good in leucorrhœa, and I have reason to suspect, that it is really sometimes useful. Nor does it seem to be less advantageous in diabetes. This is no new practice. It was employed by the celebrated Dover, and according to him with distinguished success. The remedy has since been tried, and its efficacy fully attested. It would be easy to collect the history of several cures which it has accomplished in this city.

Beneficial however as our medicine may be in the preceding cases, it is still more so in hæmorrhages. It is, indeed, in some of these affections, that it confessedly displays its best powers. To every variety of hæmorrhage, it has been thought suited, and is indiscriminately prescribed in both the active and passive states. But this is wrong. Being powerfully astringent and even stimulant, alum should never be prescribed without the previous reduction of arterial action.

To uterine haemorrhage the use of alum is at present chiefly restricted, which was indeed the original application of the medicine, by Van Helmont, who acquired great fame by the cures he effected with it. No doubt it is serviceable in these cases, though the use of it, of late years, has been in a considerable degree superseded by articles of greater efficacy. There is still, however, one case in which it retains its reputation unimpaired. It is menorrhagia, dependent on extreme atony of the uterine vessels.

The dose of alum is from five to ten grains. To prevent its exciting nausea, which it is apt to do, when freely administered, an aromatic may be joined with it. But the neatest and perhaps as an effectual mode of administering it, is that of whey, which is prepared by boiling two drachms of powdered alum in a pint of milk, and the dose is a wine glassful.

Externally, alum is employed as the basis of gargles in ulcerated sore throat, as an injection in gleet, and as a collyrium. But in recent ophthalmia, much more relief will be afforded by the alum curd, as it is called. This, which is the coagulum formed by rubbing a piece of alum in the white of an egg, is an exceedingly cooling preparation, and will sometimes reduce pain and inflammation very rapidly. It should be spread on a fold of linen, and applied over the eye.

Dissolved in water, with an equal portion of the

sulphate of zinc or copper, alum constitutes one of the most effectual of our styptics, and when burnt and reduced to powder, is an excellent escharotic.

BARYTES.

Of the preparations of this earth, the muriate, formerly called terra ponderosa, is the only one employed. Not many years ago it was introduced into practice, and promised to be a considerable acquisition to the *materia medica*, and especially as a remedy in the glandular and lymphatic affections.

We are assured by Dr. Crawford that it has cured the most inveterate cases of scrofula, and is also beneficial in cancer. Of this statement a part is confirmed by Dr. Clarke, a highly respectable writer, who says that cases of scrofula, in the negroes of the West Indies, which resisted mercury, the bark, and many other of the active remedies, very readily yielded to the muriate of barytes.

Nearly the same account is given of it in scrofula by Mr. Pearson, and he also speaks confidently of its utility in checking the progress of malignant venereal ulcers. At one period, I experimented freely with this medicine, in all the preceding cases, and with so little success that I have since been disposed altogether to abandon it. It may be

given in the dose of fifteen or twenty drops several times in the day.

CALX.

As a lithontriptic, I have already treated of this substance, in the shape of aqua calcis, which, perhaps, is the common mode of using it. Mixed with an equal portion of milk, and exhibited in the small dose of a table spoonful, to be repeated every half hour, or even oftener in some instances, the lime water is an incomparable remedy to calm irritability of the stomach, and so check vomitings from whatever cause proceeding. Nor is it scarcely less useful as a tonic and antacid, in dyspeptic and other vitiated states of the stomach. Besides these affections, it has been found serviceable, as an astringent in leucorrhœa, in the last stages of dysentery, in diarrhœa, and in cholera infantum. I know not, indeed, of any remedy which is so well suited to the bowel affections of very young children. Commonly, they are subject to purgings, produced or aggravated by excessive acidity in the primæ viæ, which it perhaps neutralizes, and thus relieves the complaint. Being also without taste, or nearly so, it is easily given under all circumstances.

Externally, lime water is employed as a wash in old ulcers, and blended with an equal part of

olive oil, it forms an excellent application to recent burns or scalds.

The muriate of lime, or what was once called fixed ammonia, is a preparation of perhaps some value. Distinct from its tonic or astringent properties, it has recently been celebrated both in Europe and this country in venereal, scrofulous and similar affections. My own experience does not enable me to say much of this article. It has occasionally been prescribed by me, though I am not aware with any very conspicuous advantage, and I suspect, such would be the report on the subject, by the generality of the practitioners of this city. The dose is from half a drachm to a drachm of the saturated solution.*

Two other preparations of lime, the *creta præparata*, and *oculi cancerorum*, each of which is a carbonate, are much employed, though chiefly, as an antacid, or astringent, to check diarrhœa, and for the latter purpose especially, are prescribed in the form of the cretaceous julep or mixture.

Of the phosphate of lime, I shall say no more, than merely to observe, that it is no longer used, the little reputation, which it once acquired from purely theoretical views, in ricketts and mollities ossium, being entirely gone.

* Edinburgh Pharmacopœia.

ACIDUM NITRICUM.

Of the mineral acids, the nitric is perhaps the most useful. Not many years ago, it was introduced, as a remedy, in the treatment of syphilis, and received an extensive trial. That it did good, in some of these cases, can hardly be doubted from the very great weight of testimony which was collected in its favour. But the result of a more enlarged experience with it, seems to be, that though it cannot be relied upon in the primary stages, it often proves highly beneficial in the secondary forms of the disease, and not less so, in repairing the mischievous consequences from an undue mercurial impression.*

* As I have stated, such would seem to be the present estimate of its powers in these cases. It is, however, due to Mr. Scott, by whom the article was originally recommended, and in a very confident tone, to mention, that he has recently come out with a defence of his former reports, coupled by an explanation of the cause of the failure of the remedy in the hands of other practitioners.

It is alleged by him, that while in India, whence he transmitted the accounts alluded to, the article he employed was produced from a manufactory, in which, from the very nature of the process carried on, as he has since discovered, *nitro-muriatic* acid was formed. To this *mixed acid*, he therefore ascribes the great effects he experienced from what he supposed at the time to be pure nitric acid, and from a compound of one part of muriatic and three of nitric acid, he now derives, as formerly, all the advantages in syphilis and other diseases. It further appears, that with nearly equal utility, the remedy may be applied externally in the shape of a bath, either partial or general, as the case may demand, the "acidulated water being made about as sour as vinegar, or of such a strength, as to prick the skin a little after an exposure to it for twenty minutes or half an hour."

In the syphilitic or pseudo syphilitic cases, in whatever way the acid

Nitric acid is diffusible in its operation, pervading every part of the system, and imparting more or less vigour to all the functions. It is, hence, an exceedingly useful remedy in a great variety of affections besides the cases already mentioned. Of these, perhaps, the most striking are certain forms of hepatitis, and especially where there is too much debility to justify the use of mercury, or when it has already been used ineffectually. To most glandular diseases, it is indeed well adapted. Of all the remedies which I have ever tried, it has proved with me the most successful in those ill conditioned scrofulous sores which approach to the nature of cancer. More than one of these cases, which had previously resisted the best modes of treatment by the ablest surgeons of this city, I have speedily cured by the free internal use of nitric acid, aided by dressings with the citrin ointment. Communications too, of its extraordinary efficacy, under similar circumstances, have been made to me by several of my correspondents.

Nitric acid is also prescribed in the complaints of the alimentary canal. I have sometimes used

is employed, he considers every trial as inconclusive where "a ptyalism, some affection of the gums, or a very evident constitutional effect does not arise from it. As with mercury the system should be kept charged with it for a longer or shorter time, according to circumstances."

What is the precise degree of credit to be given to these statements I am unable to determine. As yet my own experience with the remedy, is too narrow to allow me to express any positive opinion in relation to its superior efficacy. But the character of Mr. Scott is such as to shield him against any ungenerous imputation, and to claim for him a fair hearing on this subject.

it with effect in dyspepsia, and particularly when arising from sympathy with a diseased liver. But in the treatment of diarrhoea and dysentery it is much more used. It here operates as an astringent, and frequently with advantage. Nor is it less serviceable, perhaps, in scabies and other herpetic eruptions. But to attain its full effect, in these very intractable affections, it must be long and steadily continued.

With whatever view nitric acid is prescribed, not less than from one to two drachms should be taken in the twenty-four hours, and in some instances much more. We commence with small doses and gradually increase them to this quantity. The usual mode of directing it, is to dilute a drachm in eight ounces of water, which may be sweetened with syrup, and its sharpness obtunded by mucilage.

In dismissing the consideration of nitric acid, I cannot help remarking, that of all the articles of the *materia medica*, it is the best substitute for mercury. Their mode of action may not be exactly alike, though they are serviceable in precisely the same description of diseases. It is therefore a rule with me, where mercury is indicated, and cannot be used owing to certain circumstances, which often happens, I resort to the acid, and sometimes with great effect.*

* Lithontriptics.

ACIDUM MURIATICUM.

Of the muriatic acid, I have little to say. It has been tried in all the cases in which the nitric is employed, though not with equal success. The dose is nearly similar.* Of late, the oxymuriatic acid, has been a good deal extolled, and particularly in the more obstinate chronic eruptions. What is the precise extent of its powers under such circumstances, my experience does not enable me to determine very confidently. I have given it in several cases of herpes, and though it did well, I am not sensible of its superiority over the nitric acid.

ACIDUM SULPHURICUM.

The sulphuric acid is prescribed chiefly in the shape of elixir vitriol† which is the acid, in a state of dilution with an aromatic united. It is a very pleasant and useful tonic, and is either given alone, in the dose of fifteen or twenty drops, every two or three hours, or with the bark, &c.

Commonly, it is now prescribed with the view of invigorating appetite, and of restoring tone to the digestive organs. But, at one time, and that not

* Antilithics.

† Acidum sulphuricum aromaticum

very remote, its powers were much more highly appreciated, and it was thought even to be serviceable in some of the cases of neuroses, as chorea and epilepsy. No one, at present, however, would think of confiding the treatment of such diseases to so feeble a remedy.

To haemorrhage, it is much better suited. It is here a popular remedy, and I have sometimes seen it used with very good effect in restraining moderate uterine effusions. In epistaxis and haemoptysis, it is still more prescribed. The elixir vitriol, in all these cases was the favourite remedy of Sydenham.

In the course of the last few years, much has been alleged of its utility in the eruptive complaints. Continued for a long period, it has undoubtedly done good in psora, and might prove adequate to the removal of some other analogous affections.

Externally, it may be applied to the same purpose. In the proportion of one drachm of the acid, to an ounce of lard, an excellent unguent is formed, with which I have cured *tænia capitis* and itch. But a neater preparation in the latter case, is the acid diluted, and applied as a lotion to the surface several times a day. With this, I have removed itch almost as speedily, as with the ordinary sulphur ointment, and it is exempt from all disagreeable properties.

ERRATA VOL. I.

Page 15 line 14, from bottom, for *humoral*, read humoral.
16 — 6, from top, for *elementæ*, read elements.
22 — 11, from bottom, for *desert air*, read desert air.
30 — 4, from top, for *practicable*, read practical.
47 — 6, ——— for *stimulus*, read stimulus.
59 — 12, from bottom, for *odourous*, read odorous.
63 — 14, from top, for *refrigerents*, read refrigerants.
65 — 9, ——— delete on the system.
—— 15, from bottom, for *operation*, read influence.
69 — 2, ——— for *thorax*, read abdomen.
—— 9, from top, for *it*, read its.
79 — 17, ——— for *peritoneal*, read peritoneal.
84 — 7, from bottom, insert *with*, after emetics.
95 — 1, from top, for *in*, read it.
102 — 3, from bottom, for *grown*, read cultivated.
103 — 7, ——— for *drank*, read drunk.
113 — 7, ——— for *antimonk*, read antimoine.
115 — 4, ——— dele to be
119 — 5, from top, for *ever*, read ever.
122 — 3, from bottom, for *exanthematus*, read exanthematicus.
140 — 5, ——— dele the.
141 — 4, from top, dele the.
141 — 14, ——— for *worse*, read worst.
143 — 9, ——— for them, read these articles.
151 — 14, ——— dele *reference*, and place it in line 15, after epidemic; and in note, for *Pneumonia typhoides*, read Peripneumonia typhodes.
154 — 12, from top, for *sphere*, read verge.
155 — 3, from bottom, for *irritability*, read inirritability.
156 — 13, from top, insert the after to.
161 — 5, from bottom, insert of after generality.
162 — 12, ——— dele case.
174 — 11, ——— for *required*, read requires.
179 — 5, from top, for *life*, read life.
188 — 11, ——— for *colic*, read colicky.
190 — 7, ——— dele *reference*, and place it after sulphur, in line 6.
227 — 11, ——— dele with this view.
230 — 11, from bottom, insert *it*, before is.
261 — 11, ——— for *ursinæ*, read urinæ.
270 — 12, from top, for *seneka*, read senega.
274 — note, for *medical*, read medico.
279 — 13, from top, insert and after acid.
281 — 9, from bottom, dele the.
288 — 4, from top, for *acetaed*, read aceted.
304 — 8, from bottom, for *age*, read old.
319 — 12, ——— dele *physician and poet*.
323 — , ——— for *peritoneal*, read peritoneal.
—— 8, ——— for to, read n.
324 — 12, ——— for *phlegmnia*, read phlegmasiæ.
325 — 10, ——— for *humeral*, read humoral.
350 — 3, from bottom, dele *chronic*,
386 — 14, from top, for *dispositions*, read depositions.

ERRATA VOL. II.

Page 6 line 7, from below, for *expectorants*, read expectorant.
9 — 5, for *tor-nena*, read tormina.
9 — 2, for *appli-cation*, read applications.
32 — 13, for *congestion*, read congestion.
48 — 15, from top, for *as has been*, read or as has been.
62 — 3, from bottom, for *fif'een*, read fifty.
62 — 13, from top, for *common*, read abundant.
80 — 7, from top, for *that any other*, read than any other.
85 — 3, from below, for *that from*, read than from.
92 — 3, ——— for *not be*, read not to be.
263 — 11, from top, for *Lyne*, read Lynn.
220 — 0, ——— for *contivuent*, read constituent.
222 — 9, ——— for *demoniation*, read denomination.
223 — 16, ——— for *enemeta*, read enemata.
248 — 10, ——— for *and is entitled*, read and entitled.
259 at top of the page, for *Digitalis Puerpera*, read Digitalis Purpurea.
287 — 3, from bottom, for *cephalgia*, read cephalalgia.
323 — 6, from top, for *Muscani*, read Muscana.
437 — 5, from bottom, for *tor-nena*, read tormina.
29 — 10, from top, for *creup*, read cramps.
311 — 5, ——— for *cholica*, read colic.
317 — 4, from bottom, for *doul-to-rox*, read douloureux.
33 — 6, from bottom, for *as he has already stated*, read as has been already stated.
334 — 12, from top, for *the opinions*, read the preceding opinions.
335 — 14, ——— for *the extension of it*, read the extension of the diseased action.
351 — 13, from bottom, for *arise*, read arise.
365 — 10, from top, for *deran-gements*, read derangements.
425 — line at bottom, for *morbus*, read infantum.

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